最　終　報　告　書

Ethyl ethyldimethyltetradecylammonium sulphate：ラットを用いた経口投与による
反復投与毒性･生殖発生毒性併合試験

試験番号 R-1244

試験期間
2019 年 9 月 5 日-2020 年 3 月 23 日

試験施設
株式会社ボゾリサーチセンター　御殿場研究所
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1. GLP 陳述書

試験番号 : R-1244

試験表題 : Ethyl ethyldimethyltetradecylammonium sulphate : ラットを用いた経口投与による反復投与毒性・生殖発生毒性併合試験

本試験は以下の GLP 基準を遵守して実施した。

- 「新規化学物質等に係る試験を実施する試験施設に関する基準」
  (平成 23 年 3 月 31 日 : 薬食発 0331 第 8 号、平成 23・03・29 製局第 6 号、環保企発第 110331010 号)

[redacted] 2020 年 3 月 23 日

試験責任者
株式会社ボゾリサーチセンター 御殿場研究所

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3.　試験実施概要

3.1　試験番号

R-1244

3.2　試験表題

Ethyl ethyldimethyltetradecylammonium sulphate：ラットを用いた経口投与による反復投与毒性･生殖発生毒性併合試験

3.3　試験目的

本試験は、動物に被験物質を一定期間反復投与したときに現れる被験物質の一般毒性及び生殖発生毒性を明らかにすることを目的とした。

3.4　試験委託者

厚生労働省　医薬・生活衛生局　医薬品審査管理課　化学物質安全対策室

〒100-8916　東京都千代田区霞が関 1-2-2

3.5　試験受託者

株式会社ボゾリサーチセンター

〒151-0065　東京都渋谷区大山町 36-7

3.6　試験施設及び試験場所

3.6.1　試験施設

株式会社ボゾリサーチセンター　御殿場研究所

〒412-0039　静岡県御殿場市かまど 1284

3.6.2　試験場所（血清中ホルモン濃度測定）

株式会社ボゾリサーチセンター　つくば研究所

〒300-2611　茨城県つくば市大久保 8 番

3.7　被験物質

製造者	:	[redacted]
名称	:	Ethyl ethyldimethyltetradecylammonium sulphate
Chemical Name	:	N-Ethyl-N,N-dimethyl-N-tetradecylammonium ethylsulphate
CAS 番号	:	19309-23-0
官報公示整理番号	:	(2)-3231、(9)-1971（化審法）
入手日	:	2019 年 7 月 23 日

3.8　試験日程

試験開始日　：2019年　9月　5日
被験物質配布日　：2019年　9月25日
動物入荷日　：2019年　9月　9日
実験開始日（投与開始日）
　：2019年10月　1日
交配開始日　：2019年10月15日
分娩開始日　：2019年11月　7日
投与終了剖検日　：2019年11月12日　（雄及び非交配群）
回復開始日　：2019年11月12日
母動物剖検開始日　：2019年11月21日
回復終了剖検日　：2019年11月26日
動物試験終了日　：2019年11月28日
実験完了日（病理組織学検査終了日）
　：2020年　2月26日
試験終了日　：2020年　3月23日

3.9　試験責任者

株式会社ボゾリサーチセンター　御殿場研究所　研究部
[redacted]

3.10　試験担当者

被験物質管理責任者　：[redacted]
試験主担当者　：
臨床検査責任者　：
病理検査責任者　：
化学分析（被験液分析）責任者
　：[redacted]
血清中ホルモン濃度測定責任者（試験主任者）*
　：[redacted]
*：株式会社ボゾリサーチセンター　つくば研究所

3.11　試験成績の信頼性に影響を及ぼしたと思われる環境要因

本試験に関し、試験成績の信頼性に影響を及ぼしたと思われる環境要因はなかった。

3.12　予見することができなかった試験の信頼性に影響を及ぼす疑いのある事態及び試験計画書に従わなかったこと

本試験に関し、試験の信頼性に影響を及ぼす疑いのある事態はなかった。

なお、試験計画書に従わなかったことを以下に記載した。

1) 病理組織学検査の標本作製において、2 例（動物番号：1106、6107）で上皮小体（両側）がスライド標本から欠落した。しかし、各群 1 例のみであり、他の動物では上皮小体への被験物質の影響は評価可能であったことから、被験物質による上皮小体への影響は認められないことが判断可能であった。本件による試験へ及ぼす影響はないと判断した。
2) 剖検後の採取器官/組織確認作業において、1 例（動物番号：3008）で膀胱が紛失した。しかし、本動物は病理組織学検査対象動物ではなかったため、本件による試験成績へ及ぼす影響はなかった。

3.13　資料保存

試験計画書（試験計画書変更書を含む）原本、記録文書、生データ、報告書類（最終報告書の原本を含む）及び標本（被験物質保存試料を含む）は株式会社ボゾリサーチセンター　御殿場研究所の資料保存施設に保存する。ただし、臨床検査後の残余生体試料（尿、血漿、血清）及び腟垢標本については試験終了までに廃棄した。また、固定した死産児及び死亡児については、出生率、生後 4 及び 13 日生存率に被験物質投与の影響が認められなかったため、廃棄した。資料の保存期間は試験終了後 5 年間とする。

血清中ホルモン濃度測定に関するホルモン濃度測定計画書原本、生データ等の試験関係資料及びホルモン濃度測定報告書原本は、試験場所（株式会社ボゾリサーチセンター　つくば研究所）又は試験場所指定の GLP 保存施設に保存する。なお、その期間はホルモン濃度測定報告書作成後 5 年間とする。

試験施設と試験場所における保存期間終了後の資料の取扱いについては厚生労働省医薬・生活衛生局　医薬品審査管理課　化学物質安全対策室と株式会社ボゾリサーチセンター間で協議し、その処置を決定する。

3.14　試験責任者の署名

[redacted] 2020年 3月 23日

株式会社ボゾリサーチセンター　御殿場研究所

4. 要約

Ethyl ethyldimethyltetradecylammonium sulphate を注射用水に溶解させ、5、15 及び 50 mg/kg の投与量で Sprague-Dawley 系 SPF ラット（交配群として雌雄各 12 匹/群、雌には交配を行わない非交配群として媒体対照群及び 50 mg/kg 群に各 10 匹を追加）の雄には交配前 14 日間に加え交配期間を通して剖検前日まで（42 日間）、交配群雌には交配前 14 日間に加え交配期間及び妊娠期間を通して授乳 13 日まで（51~58 日間）、非交配群雌には 42 日間、強制経口投与し、反復投与毒性及び生殖発生毒性を検討した。更に、媒体対照群及び 50 mg/kg 群の一部の動物（雄 5 匹と非交配群雌 5 匹）については、42 日間投与した後 14 日間の回復期間を設け、毒性変化の可逆性を検討した。なお、媒体対照群には媒体である注射用水を投与した。

4.1 反復投与毒性

いずれの投与群においても死亡動物はみられず、一般状態、詳細な一般状態観察、機能検査、握力、自発運動量、体重、尿検査の定性項目、血液学検査、血清中ホルモン(T4)、甲状腺重量、雌雄の生殖器重量、剖検及び病理組織学検査には被験物質投与の影響は認められなかった。

50 mg/kg 群では、雄及び交配群雌で投与 2 日（投与開始翌日）の摂餌量に、加えて雄で投与 8 日の摂餌量と交配前投与期間中（投与 1~15 日）の総摂餌量に、それぞれ低値が認められたが､投与初期に限定的で体重に関連した変化はみられないことから、毒性学的意義は乏しいと判断した。また、雄で投与 6 週に尿中ナトリウム及びカリウムの低値、投与終了時に AST、ALT 及び CRNN の高値並びに副腎重量の高値が認められた。

5 及び 15 mg/kg 群では、いずれの検査においても、被験物質投与による影響は認められなかった。

14 日間の回復期間により上記変化は消失し、回復性が認められた。

4.2 生殖発生毒性

親動物及び児動物のいずれの検査においても、被験物質投与による影響は認められなかった。

これらの結果から、本試験条件下において、本被験物質の反復投与毒性に対する無毒性量は雄で 15 mg/kg、雌で 50 mg/kg と判断した。一方、生殖発生毒性に対する無毒性量は、雄親動物、母動物及び児動物のいずれも影響が認められないことから、いずれも 50 mg/kg と判断した。

5. 緒言

厚生労働省　医薬・生活衛生局　医薬品審査管理課　化学物質安全対策室の委託により、Ethyl ethyldimethyltetradecylammonium sulphate のラットを用いた経口投与による反復投与毒性･生殖発生毒性併合試験を実施したので、その成績を報告する。

なお、本試験は以下の基準を遵守し、ガイドライン等に準拠して、株式会社ボゾリサーチセンターで実施した。

5.1 GLP

- 「新規化学物質等に係る試験を実施する試験施設に関する基準」
  （平成 23 年 3 月 31 日：薬食発 0331 第 8 号、平成 23･03･29 製局第 6 号、環保企発第 110331010 号）

5.2 毒性試験ガイドライン

- 「新規化学物質等に係る試験の方法について」
  （平成 23 年 3 月 31 日付け薬食発 0331 第 7 号厚生労働省医薬食品局長、平成 23・03・29 製局第 5 号経済産業省製造産業局長、環保企発第 110331009 号環境省総合環境政策局長連名通知）（最終改正：平成 30 年 3 月 29 日）

5.3 動物の福祉

- 「動物の愛護及び管理に関する法律」
  （昭和 48 年 10 月 1 日法律第 105 号）
- 「実験動物の飼養及び保管並びに苦痛の軽減に関する基準」
  （平成 18 年 4 月 28 日環境省告示第 88 号）
- 「動物実験の適正な実施に向けたガイドライン」
  （日本学術会議 平成 18 年 6 月 1 日）
- 「厚生労働省の所管する実施機関における動物実験等の実施に関する基本指針について」
  （平成 18 年 6 月 1 日科発第 0601001 号）

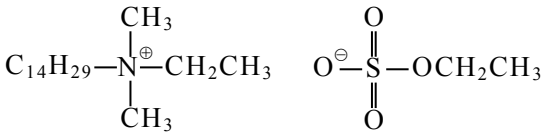
本試験は動物実験委員会（IACUC）の承認を受けて実施した（承認番号:G190187）。

6. 試験材料及び方法

6.1 被験物質及び媒体

6.1.1 被験物質

被験物質は[redacted]ら以下の情報とともに提供された。また、投与開始前に赤外吸収スペクトルの測定により特性が確認されている（Attachment 1）。

製造者	:	[redacted]
名称	:	Ethyl ethyldimethyltetradecylammonium sulphate
Chemical Name	:	N-Ethyl-N,N-dimethyl-N-tetradecylammonium ethylsulphate
CAS 番号	:	19309-23-0
官報公示整理番号	:	(2)-3231、(9)-1971（化審法）
構造式又は示性式	:	
分子式	:	$C_{18}H_{40}N.C_2H_5O_4S$
分子量	:	395.64
外観	:	白色個体
融点	:	150°C（分解）
溶解度	:	[水] 可溶（>2000 mg/L） [アセトン] 可溶（>2000 mg/L） [DMSO] 可溶（>2000 mg/L）
ロット番号	:	[redacted]
入手量	:	950 g
純度	:	99.1 wt%
組成	:	99.1%；有効成分 0.1%；水分 0.4%；未反応アミン 0.4%；エチル硫酸
保存条件	:	室温（許容範囲：1°C~30°C、実測値：18.9°C ~24.7°C）、遮光、気密、防湿
保存方法	:	アルミバッグに入れ、シリカゲルとともに保存
保存場所	:	被験物質保存室（御殿場研究所）及び被験物質調製室
安定性確認	:	投与期間終了後に株式会社ボゾリサーチセンター 御殿場研究所で残余被験物質の赤外吸収スペクトルを確認した結果、投与期間開始前に確認したスペクトルとほぼ同様であり安定性に問題はなかった（Attachment 2）。

取扱い上の注意　：作業場の換気を十分に行い、マスク、保護眼鏡、保護手袋等の適切な保護具を着用し、直接の接触を防ぐ。取り扱い後は、手、顔等を良く洗い、うがいをする。
保存試料　：被験物質約 1 g を保存試料として保存した。
残余品の処理　：使用後の残余は供給元に返却した。

6.1.2　媒体

名称　：注射用水[注]
規格　：日本薬局方
メーカー　：株式会社大塚製薬工場
ロット番号（有効期限）
：8K83（2023 年 11 月）及び 9B89（2024 年 2 月）
保存条件　：室温
保存場所　：被験物質調製室

注：媒体は、本試験に先立って実施した「Ethyl ethyldimethyltetradecylammonium sulphate：特性試験並びに LC/MS 法による被験液中濃度測定法バリデーション及び安定性試験（媒体：注射用水）」（株式会社ボゾリサーチセンター、試験番号：A-3092）[1)]において、注射用水中での被験物質の安定性に良好な結果が得られていることから、注射用水を選択した。

6.2　媒体及び被験液の調製

6.2.1　媒体の調製

6.2.1.1　調製方法

注射用水をそのまま用いた。媒体対照群の投与に用いる媒体は、被験物質を取り扱う前に 1 日必要分ずつ褐色ガラス瓶に分注した。

6.2.1.2　保存条件

媒体対照群投与液として分注した媒体は、被験液と同じ条件で保存した。

6.2.2　被験液の調製

6.2.2.1　調製方法

先ず高用量群被験液を調製し、中及び低用量群被験液は高用量群被験液を媒体で段階的に希釈して調製した。調製手順を以下に示す。

＜高用量群被験液（5 mg/mL）＞

1) 被験物質の必要量を秤取した。
2) 規定量の約 7 割の媒体をビーカーに入れ、スターラーで撹拌しながら秤取した被験物質を添加し、溶解した。
3) 溶解液をメスシリンダーに移した。
4) ビーカーを媒体で 2、3 回洗い、その液もメスシリンダーに入れた。

5) メスシリンダーに媒体を加えて所定量とした後、パラフィルムで蓋をして転倒混和し、高用量群被験液とした。
6) それをビーカーに移し、中用量群被験液の調製に必要な量をメスシリンダーに採取した後、残りを投与用として 1 日必要分ずつ褐色ガラス瓶に分注した。

＜中用量群被験液（1.5 mg/mL）＞

1) 採取した高用量群被験液を媒体で 10/3 倍希釈（3 mL→10 mL の割合）した後、パラフィルムで蓋をして転倒混和し、中用量群被験液とした。
2) それをビーカーに移し、低用量群被験液の調製に必要な量をメスシリンダーに採取した後、残りを投与用として 1 日必要分ずつ褐色ガラス瓶に分注した。

＜低用量群被験液（0.5 mg/mL）＞

1) 採取した中用量群被験液を媒体で 3 倍希釈（1 mL→3 mL の割合）した後、パラフィルムで蓋をして転倒混和し、低用量群被験液とした。
2) それをビーカーに移し、投与用として 1 日必要分ずつ褐色ガラス瓶に分注した。

6.2.2.2 調製頻度

最大 7 日分を一括して調製し、調製後 8 日以内に使用した。

6.2.2.3 保存条件

冷蔵（許容範囲：1°C~10°C、実測値：4.8°C ~6.2°C）保存した。

6.2.2.4 安定性

株式会社ボゾリサーチセンターにおいて、被験物質（ロット番号 HK0390）の 0.1 及び 10 mg/mL 液（媒体：注射用水）は冷蔵（1°C~10°C）8 日間保存後室温 24 時間の安定性が確認されている（試験番号 A-3092、Attachment 3）[1)]。

6.2.3 被験液の分析

初回投与及び雄の最終投与に使用した各濃度の被験液（任意の場所から各約 10 mL 採取）について、株式会社ボゾリサーチセンター　御殿場研究所にて高速液体クロマトグラフィー・マススペクトロメトリー（LC/MS）法により濃度測定を実施した。なお、初回投与に使用した被験液については、投与開始前に分析を行った。その結果、各濃度液における被験物質濃度の表示値に対する割合は 98.0%~108.4%であり、いずれも評価基準（濃度許容範囲：表示値に対する割合；100% ± 10%）を満たしたことから、被験液の調製に問題はなかったと判断した（Attachment 4）。なお、本測定法は株式会社ボゾリサーチセンター　御殿場研究所にて実施したバリデーション試験で確立された方法である（試験番号：A-3092）[1)]。分析法の概略を以下に示した。

1) 測定対象物質
Ethyl ethyldimethyltetradecylammonium sulphate

2) 標準物質
被験物質から一部分取したものを標準物質として使用した。
名称 : Ethyl ethyldimethyltetradecylammonium sulphate
供給者 : 花王株式会社
保存条件 : 室温（許容範囲 : 1°C~30°C、実測値 : 17.9°C~24.7°C）、遮光、気密、防湿
保存場所 : 御殿場研究所　被験物質保存室及び分析棟　分析室

3) 測定実測試料の調製
各測定試料を転倒混和した後、無作為に n=3 で採取した。アセトニトリルで正確に希釈し、測定実測試料を調製した。

被験液（mg/mL）	1 次希釈		2 次希釈		3 次希釈		希釈率
	被験液採取量（mL）	定容量（mL）	1 次希釈液採取量（mL）	定容量（mL）	2 次希釈液採取量（mL）	定容量（mL）	
0.5	1	100	1	50	−	−	5000
1.5	1	50	1	30	1	10	15000
5	1	100	1	50	1	10	50000

溶媒 : アセトニトリル

4) LC/MS/MS システム

機器名及び型式		メーカー
HPLC	2795 セパレーションモジュール	Waters Corporation
MS/MS	API4000	AB SCIEX
データ処理装置	Analyst 1.5	AB SCIEX
コンプレッサ	AS2UD-5	KOBELCO

5) 測定条件
(1) LC 条件
カラム : CAPCELL PAK CN UG120
（2.0 mm i.d. × 150 mm、粒子径 5 μm）
カラム恒温槽設定温度
: 40°C
移動相 A : 20 mmol/L ギ酸アンモニウム溶液
移動相 B : アセトニトリル
流量 : 0.5 mL/min（移動相 A : 移動相 B=55 : 45 の一定）

オートサンプラー設定温度
: 5°C
試料注入量 : 5 μL
ニードル洗浄液 : アセトニトリル／精製水混液（6：4）
パージ溶媒 : アセトニトリル／精製水混液（6：4）
分析時間 : 10 分間

(2) MS 条件
Source : Turbo Spray（ESI）
Scan type : Q1 Multiple Ions (Q1 MI)
Polarity : Positive
Resolution Q1 : Unit
CUR : 20
GS1 : 30
GS2 : 40
IS : 5000
TEM : 500
ihe : ON
DP : 91
EP : 10
Monitor ion : 270.3
Dwell : 500
バルブ設定 :

Time (min)	Position
0.0	A（to waste）
3.0	B（to MS）
6.0	A（to waste）

6) 測定結果の保証
(1) 再注入及び再測定
再注入及び再測定を必要とする事象はなかった。

(2) 試験の信頼性に影響を及ぼしたと考えられる要素
測定開始前に実施したシステム適合性の結果は判定基準を満たした。
試験の信頼性に影響を及ぼしたと考えられる要素はなかった。

6.3　試験系及び系統の選択理由

毒性試験ガイドラインによりげっ歯類を用いた試験が必要とされている。ラットは医薬品などの安全性試験に広く用いられており、この試験に使用される系統のラットは特性がよく知られ、背景資料が豊富であることから選択した。

6.4　試験動物及び群分け

動物種　：ラット（SPF）
系統　：Sprague-Dawley〔Crl:CD(SD)〕
供給源　：日本チャールス・リバー株式会社、厚木飼育センター
入荷時週齢　：7 週齢
購入匹数　：雄 56 匹、雌 82 匹
検疫・馴化期間　：22 日間
投与開始時週齢　：10 週齢
供試動物数　：雄 48 匹、雌 68 匹
検疫・馴化期間中の飼育観察
：全動物について、体重測定（5 回：馴化 1、3 日、以降は週 1 回以上及び群分け日）、体外表、栄養状態、姿勢、行動及び排泄物の異常などの一般状態観察（1 回/日）を実施した。詳細な一般状態の観察（詳細は 6.12.2 項参照）を検疫終了後、群分けまでの期間に実施した（1 回）。更に、雄は検疫期間終了後、群分け前までに陰嚢内の精巣の触診（1 回）及び陰茎亀頭の観察（1 回）を実施し、雌は検疫期間終了後、群分け前まで膣垢を採取して性周期を調べた（詳細は 6.12.5 項参照）。
供試動物の選択　：検疫・馴化期間中の一般状態、詳細な一般状態の観察、入荷日から群分け日までの体重推移、精巣の触診結果及び性周期（馴化 6~19 日の 14 日間）に異常がなく、性成熟に達した陰茎亀頭であることを条件とし、健康と考えられる動物を選択した。
群分け　：上記に示した手順で選択した動物のうち、体重増加（検疫初回の体重~群分け時の体重）が順調な動物を群分け当日（投与開始前日）の体重に基づいて、各群の平均体重ができるだけ均等となるように群分けを行った。動物の割付けはコンピュータを用いたブロック・ランダム化により行った（ブロック配置により必要な群を構成し、試験群及び群内の個体番号を無作為に割当てた）。
投与開始時の体重の変動範囲
：雄は 369 g~444 g（平均値：410 g）、雌は 220 g~279 g

（平均値：250 g）であり、雌雄それぞれ平均体重の± 20%以内であった。

残余動物の処置　：　供試動物の選択条件を満たして余剰となった雌 14 匹は交配予備動物（無処置動物）として継続飼育し、交配群動物の交配が終了した後、2019 年 10 月 30 日に試験から除外した。残余動物の雄 8 匹は、群分け後の 2019 年 10 月 3 日に試験から除外した。なお、試験から除外された動物は、動物管理部門に移管した。

6.5　飼育条件

飼育室番号　：　911 号室及び 912 号室。検疫・馴化期間は性ごとに収容（雄：911 号室、雌：912 号室）、群分け後は各群を 2 分割して収容した（表 1 参照）。

表 1. 飼育室の動物振り分け表（群分け後）

飼育室番号	911		912	
性	雄	雌	雄	雌
動物番号	1001~1007 2001~2007 3001~3007 4001~4007	1101~1107 2101~2107 3101~3107 4101~4107 5101~5105 6101~6105	1008~1012 2008~2012 3008~3012 4008~4012	1108~1112 2108~2112 3108~3112 4108~4112 5106~5110 6106~6110

温度　：　23°C ± 3°C（実測値：21°C~24°C）

相対湿度　：　50% ± 20%（実測値：44%~52%）

換気回数　：　1 時間 10~15 回

照明　：　1 日 12 時間（07:00~19:00）

ケージ　：　床敷（コンフィネスト：株式会社ファルマ、ロット番号 2018-11）を入れたプラスチック製平底ケージ（W440 × D275 × H180 mm：株式会社羽生精密）

ケージ収容匹数　：　入荷から群分けまで；同性 2 匹/ケージ
群分け日以降；1 匹/ケージ
交配中；雌雄各 1 匹の計 2 匹/ケージ
交尾成立雌；授乳 13 日まで 1 腹単位/ケージ

飼料　：　固形飼料 CRF-1（γ 線滅菌、オリエンタル酵母工業株式会社、ロット番号 190312、190607、190705、190805）をステンレス製給餌器に入れて自由に摂取させた。

飲料水　：　御殿場市営水道水を自動給水装置により自由に摂取させた。

環境エンリッチメント
: 動物実験委員会の指針に従って、適切な環境エンリッチメントを与えた。

6.6 飼料、床敷及び飲料水中の混入物質

下記の混入物質に関する分析報告書の結果が基準内であることを確認した。

- 飼料の分析報告書（Eurofins Food and Product Testing、供試全ロット）
- 床敷の分析報告書（一般社団法人日本食品分析センター、供試全ロット）
- 水道法に準拠した水質の分析報告書（芝浦セムテック株式会社、年 4 回）

6.7 動物の識別

検疫・馴化期間 : 入荷時に番号が刻印された小動物用耳標を装着し、この番号を個体識別の基本とした。各飼育ケージにはラベルを添付し、試験番号、耳標番号、性を明記した。

群分け後 : 試験群、性及び群内の個体番号が区別できるよう 4 桁の数字を割り当てた（表 2 及び表 3 の群構成参照）。出生児については生後 13 日の体重測定時に、母動物番号に続けて性別を示すアルファベット（雄は M、雌は F）、同腹内番号を示す 2 桁の出生児番号を体重測定順に割付け、油性インクによる記号で識別した。各飼育ケージには投与量（群）ごとに色分けしたラベルを添付し、試験番号、投与経路、投与量、性別、動物番号、耳標番号、剖検予定日（雄及び非交配群の雌）、交尾成立日（交配群の雌雄）及び分娩日（交配群の雌）を明記した。また、ケージラベルの裏には試験番号、性別及び耳標番号のみを表示し、詳細な一般状態の観察、機能検査あるいは握力測定時には、ケージラベルを裏返して観察者への投与量の情報を制限した。

6.8 投与経路、投与期間、投与回数及び回復期間とそれらの選択理由

毒性試験ガイドラインに準じ、投与経路は、経口投与を選択した。投与期間は、投与日数として、交配群雌雄ともに交配前 14 日間、更に、雄は交配開始後 28 日間、雌は交配期間及び妊娠期間を通して授乳 13 日までとし、非交配群の雌は 42 日間とした。投与回数は反復投与試験で一般的に行われている 1 日 1 回（7 日/週）とした。

回復動物は、42 日間の投与期間が終了した後、被験物質投与に起因した変化の可逆性、持続性並びに遅発性毒性等について観察するため、14 日間の回復期間を設けた。

6.9　投与方法

投与方法は、げっ歯類の経口投与において一般的な強制経口投与とした。

投与容量は 10 mL/kg とし、フレキシブル胃ゾンデを用いて強制経口投与した（08:17~12:29 の間）。ただし、投与時に分娩途中であった場合、分娩の終了を待って投与を行った。媒体対照群には媒体（注射用水）のみを同様に投与した。動物ごとの投与液量（表示単位：0.1 mL）は直近の体重を基準に算出した。

6.10　投与量及び群構成

投与量は 5、15 及び 50 mg/kg の 3 用量とし、試験群はこれらの用量群に媒体対照群を加えた 4 群構成とした。1 群当たりの動物数は交配を行う交配群として各群で雌雄各 12 匹、交配しない非交配群として媒体対照群及び高用量群で雌各 10 匹とした。なお、媒体対照群及び高用量群における雄の 5 匹、非交配群の雌の 5 匹は、最終投与終了日以降、回復動物とした。群構成を表 2 及び表 3 に示す。

表 2. 群構成（雄）

試験群	投与量 (mg/kg)	被験液濃度 (mg/mL)	投与容量 (mL/kg)	交配群			
				投与終了時剖検群		回復終了時剖検群	
				動物数	動物番号	動物数	動物番号
媒体対照	0	0	10	7	1001-1007	5	1008-1012
低用量	5	0.5	10	12	2001-2012		
中用量	15	1.5	10	12	3001-3012		
高用量	50	5	10	7	4001-4007	5	4008-4012

表 3. 群構成（雌）

試験群	投与量 (mg/kg)	被験液濃度 (mg/mL)	投与容量 (mL/kg)	交配群		非交配群			
				投与終了時剖検群		投与終了時剖検群		回復終了時剖検群	
				動物数	動物番号	動物数	動物番号	動物数	動物番号
媒体対照	0	0	10	12	1101-1112	5	5101-5105	5	5106-5110
低用量	5	0.5	10	12	2101-2112				
中用量	15	1.5	10	12	3101-3112				
高用量	50	5	10	12	4101-4112	5	6101-6105	5	6106-6110

6.11　投与量の設定根拠

本試験の投与量は、先に実施した「Ethyl ethyldimethyltetradecylammonium sulphate：ラットを用いた 14 日間反復経口投与毒性試験（投与量設定試験）（試験番号：N-R084、投与量：10、30、100、250、500 及び 1000 mg/kg、5 匹/群/性、株式会社ボゾリサーチセンター）」[2)]の結果を参考に設定した。投与量設定試験では、1000 mg/kg で投与 2 日に雌雄全例、500 mg/kg で投与 2~4 日に雌雄全例、250 mg/kg で投与 3~6 日に雌雄全例が死亡し､死亡例の盲腸には水様性内容物の貯留がみられた。100 mg/kg では、雄で投与初期に一過性の摂餌量の低下を伴った体重増加抑制傾向、アスパラギン酸アミノトランスフェラーゼ（AST）、アラニンアミノトランスフェラ

ーゼ（ALT）及び総コレステロールの高値、肝臓及び心臓の重量減少、雌で投与前半に摂餌量の低下傾向、軟便、赤血球容積分布幅及び血小板数の高値、AST の高値傾向、ALT の高値、雌雄で前胃の肥厚及び盲腸に水様性内容物の貯留がみられた。30 mg/kg では、雄で AST 及び ALT の高値が認められ、雌でもその傾向がみられた。したがって、これら経日死亡状況と本試験の投与期間が最長 9 週間程度であることを考慮し、本試験の高用量群を、毒性発現が予想される 50 mg/kg に設定し、中用量群以下を公比約 3 で除して 15 及び 5 mg/kg に設定した。

6.12　観察及び検査の方法

試験日の起算に関しては以下の通りとした。

投与開始日　：　投与 1 日（Day 1 of administration）
投与 1 日から 7 日　：　投与 1 週（Week 1 of administration）
回復開始日（投与 42 日の翌日）
：　回復 1 日（Day 1 of recovery）
回復 1 日から 7 日　：　回復 1 週（Week 1 of recovery）
交尾成立日　：　妊娠 0 日（Gestation Day 0）
分娩終了日（出産日）
：　授乳 0 日（Lactation Day 0）
出生日　：　生後 0 日（Postnatal Day 0）

6.12.1　一般状態の観察

全動物について、投与期間中は毎日 3 回（投与前、投与直後及び投与 1~3 時間後、ただし、詳細な一般状態の観察実施日は投与前と投与直後の 2 回/日）、回復期間中は毎日 1 回（午前 ; 07:00~12:30）、剖検日は 1 回（剖検のための動物搬出前）、それぞれ生死、身体の外観、排泄物（尿、糞）、姿勢及び行動などの一般状態における異常の有無を観察した。なお、投与 2 日以降の動物のハンドリングを伴った定期的な観察は、詳細な一般状態の観察と兼ねて行った。

6.12.2　詳細な一般状態の観察、機能検査、握力及び自発運動量の測定

詳細な一般状態の観察は全動物について行った(投与期間中は検査当日の投与後)。

雄及び非交配群雌は投与期間中及び回復期間中毎週 1 回、交配群雌は交配前投与期間中毎週 1 回、交配期間中の未交尾動物は交配開始後 6 及び 13 日、妊娠期間中及び授乳期間中は指定された日（交尾動物は妊娠 1、7、14 及び 20 日、分娩動物は授乳 6 及び 13 日）にそれぞれ行った。

機能検査、握力測定及び自発運動量測定は、各群の 5 匹（雄の群内番号 8~12 番、交配群雌は各群の分娩順で動物番号が若い順に 5 匹 注)、非交配群雌の群内番号 6~10 番）について行った。投与期間中は交配群雌では授乳 13 日（投与 51~53 日）に、その他は投与期間終了週（投与 37 日）に、回復期間中は媒体対照群及び高用量群の雌

雄について回復期間終了週（回復 9 日）に行った。

上記の観察、検査及び測定は、観察者に対して投与量などの情報を制限（ブラインド化）し、動物をランダムに配置した状態で行った。ただし、自発運動量の測定はブラインド化しないで行った。なお、詳細な一般状態の観察及び機能検査の観察・検査結果については、実数データ以外はスコア化した評点法を用いて記録した。

注)：交配群雌の検査対象動物を表 4 に示した。

表 4. 機能検査、握力測定及び自発運動量測定を実施した交配群雌動物

試験群	動物番号
媒体対照群	1101、1102、1106、1109、1110
低用量群	2101、2104、2110、2111、2112
中用量群	3101、3106、3107、3109、3111
高用量群	4103、4105、4106、4108、4112

6.12.2.1　詳細な一般状態の観察

1) ケージ内観察
姿勢、痙攣、異常行動

2) 手に持っての観察
ケージからの取り出し易さ、被毛・皮膚の状態、眼・鼻の分泌物、眼球突出、眼瞼閉鎖状態、可視粘膜、自律神経機能（流涙、流涎、立毛、瞳孔径、異常呼吸）、ハンドリングに対する反応、ハンドリング時の発声

3) オープンフィールド内観察
覚醒状態、痙攣、異常行動、常同行動、歩行、姿勢、身繕い、立ち上がり回数、排泄物（排糞数、排尿）

6.12.2.2　機能検査

聴覚反応、接近反応、接触反応、痛覚反応、瞳孔反射、空中正向反射

6.12.2.3　握力測定

機能検査に引き続き、CPU ゲージ MODEL-RX-5（アイコーエンジニアリング株式会社）を用いて前肢及び後肢の握力を測定した。測定は前肢及び後肢とも 2 回行い、それぞれ平均値を算出した。

6.12.2.4　自発運動量測定

握力測定に引き続き、実験動物用自発運動センサーNS-AS01（株式会社ニューロサイエンス）を用いて自発運動量を測定した。測定時間は 1 時間とし、10 分間隔及び 0~60 分の測定値を集計した。

6.12.3　体重測定

雄及び非交配群雌は投与 1、8、15、22、29、36 及び 42 日に、回復動物は更に回復 1、8 及び 14 日に、交配群雌は投与 1、8、15 及び 22 日、妊娠 0、7、14 及び 20 日、授乳 0、4、7 及び 13 日、並びに全動物は剖検日に体重を測定した。なお、分娩が午後となった母動物の授乳 0 日の体重は 14:03~16:53 の間に、剖検日は前日から約 16 時間絶食させた後、相対器官重量算出用に 07:33~08:47 の間に、その他は 08:05~11:16 の間（投与期間中は投与前）に測定した。妊娠 25 日未分娩動物（動物番号 1112、3105）及び交尾不成立雌動物（動物番号 3102、4102）の剖検日の体重並びに交配期間中の雌の体重は参考値とし帳票には反映しなかった。

6.12.4　摂餌量測定

雄及び非交配群雌は投与 2、8、15、30、36 及び 42 日に、回復動物は更に回復 2、8 及び 14 日に、交配群雌は投与 2、8 及び 15 日、妊娠 1、7、14 及び 20 日並びに授乳 2、4、7 及び 13 日にそれぞれ残餌量を測定し、前日の給餌量との差から 1 匹当たりの 1 日摂餌量を算出した。給餌量/残餌量の測定は測定日の 08:05~11:26 の間（投与期間中は投与前）に行った。

6.12.5　腟垢検査

交配群雌の全動物について、投与開始日から交尾成立まで毎日（午前）腟垢を採取した。交配前投与期間中の標本について、多数の角化上皮細胞から成る腟垢像を発情の指標とし、発情回数及び発情期から次の発情期までの日数（性周期）、観察雌動物数に対する性周期異常を示した動物数の割合を調べた。交配期間中は腟垢内の精子の有無を調べるのに加え、腟垢像を発情前期（P）、発情期（E）、発情後期（M）及び発情休止期（D）に分類した。

非交配群雌については、交配群の交配成績から交尾までに要した日数あるいは交尾率に被験物質投与の影響が認められなかったことから、腟垢検査は実施しなかった。

交配期間中の腟垢観察は交尾確認を目的とすることから、腟垢像の分類結果については参考データとし、帳票として集計は行わなかった。

6.12.6　交配方法

交配前投与期間終了後、交配群の同投与群内の個体番号が同じ雌雄を 1:1 で終夜同居させ、翌朝、腟内の腟栓形成あるいは腟垢中に精子を確認したものを交尾成立とみなした。同居は雌を雄のケージへ移すことにより行った。交配開始日を 0 日と起算して交尾までに要した日数を求めた。同一雌雄による同居期間は最長 14 日間であった。交尾が成立しなかった雌（動物番号 3102、4102）は交配期間終了日を妊娠 0 日と仮定して、一般状態の観察、体重・摂餌量測定並びに投与を継続し、25 日後に剖検を行った。なお、交尾不成立雌動物については、仮定した妊娠日に基づくデータは試験成績から除外した。

6.13　分娩及び哺育観察

6.13.1　母動物の観察

交尾成立雌動物は、妊娠 21 日から妊娠 25 日の午前まで 1 日 2 回（午前・午後）、分娩の有無並びにその終了を確認するとともに分娩状態（胎盤の処理及び出産児の状態）を観察した。交尾成立から分娩終了までを妊娠期間とし、妊娠期間を 0.5 日単位で求めた。なお、分娩終了の確認は 17:00 までとした。

分娩が終了した母動物は授乳 13 日まで出生児を哺育させ、児集め、営巣及び授乳を指標として哺育状態を観察し、授乳 14 日に病理学検査に供した。

妊娠 25 日の午前までに分娩しなかった 2 例の雌動物（動物番号 1112、3105）は、イソフルラン麻酔下で採血後、腹大動脈切断により放血致死させ、剖検を行った結果、1 例（動物番号 1112）は着床が認められなかったため不妊と判断した。この動物の妊娠期間中のデータは試験成績より除外した。1 例（動物番号 3105）は子宮内に着床の痕跡が認められたため、黄体数及び着床数を数え、受胎産物の状態を記録した。

6.13.2　出生児の観察

生後 0 日に出生児数及び死産児数を数え、合わせて出産児数とした。出産児は口腔内を含む外表異常の有無を肉眼的に観察し、性別を判定した。出生児は体重を個体別に測定し、さらにスライドゲージを用いて、肛門縁から生殖突起の付け根までの距離（AGD ; anogenital distance、肛門生殖突起間距離）を測定（0.1 mm 単位）した後、母動物に哺育させた。死産児はブアン液で固定して保存した。

生後 13 日まで、母動物の一般状態観察時に死亡児及び異常行動の有無を確認した。死亡児は肉眼で異常の有無を観察した後、ブアン液で固定して保存した。生存児は生後 0、4、7 及び 13 日に体重を個体別に測定し、各腹単位で雌雄別に平均値を算出した。生後 4 日の性別の確認及び体重測定後、1 腹当たりの哺育児数を 8 匹（可能な限り雌雄 4 匹ずつ）となるように調整した。哺育児数が 8 匹に満たない腹（母動物番号 1111）については調整を行わなかった。除外された出生児のうち各群分娩順の 5 腹について、各腹 2~5 匹の生後 4 日除外児を無作為に選び、イソフルラン麻酔下に開腹し、腹大動脈から血液（目標：合計約 0.6 mL）を無処理のサンプルチューブに注射筒を用いて採取した。血液は遠心分離（3,000 rpm、約 1,600×g、10 分間）して血清を得た。血清は、腹ごとにプールした後（約 0.2 mL）、血清中ホルモン濃度測定に備え−80°C の冷凍庫（許容範囲：−70°C 以下、実測値：−90.8°C~−81.0°C）に保存し、試験場所に輸送したが、雄及び生後 13 日齢児のホルモン測定結果に影響が認められなかったため、測定は実施しなかった。採血した児は、残りの除外された出生児とともにイソフルラン麻酔下で腹大動脈切断により放血致死させた後、廃棄した。

生後 13 日に全生存児の性別を確認し、雄児について乳頭/乳輪数を調べ、記録した。各群分娩順で両性の児が存在する 5 腹について、各腹から無作為に雌雄各 1 匹を選び、イソフルラン麻酔下に開腹し、腹大動脈から血液（目標：合計約 2.0 mL）を無処理のサンプルチューブに注射筒を用いて採取した。血液は遠心分離（3,000 rpm、約 1,600×g、

10 分間）して血清を得た。血清は腹ごとにプールした後、サンプルチューブに分注（約 0.3 mL×3 本；それぞれ 1 本ずつ赤、青、緑に色分けした）し、送付時まで−80°C の冷凍庫（許容範囲：−70°C 以下、実測値：−90.8°C~−81.0°C）に保存した。採血した児は、残りの生存児とともにイソフルラン麻酔下で腹大動脈切断により放血致死させ、外部生殖器に注意を払い体外表、胸腔内及び腹腔内の主要器官/組織を肉眼的に観察した。全母体の各腹雌雄各 1 匹（出生児番号：M01 及び F01）の甲状腺は、摘出してリン酸緩衝 10%ホルマリン液で固定し、重量を測定後、同固定液に保存した。甲状腺重量（絶対重量）は左右別々に測定し、その合計値と剖検日の体重から体重 100 g 当たりの相対重量を算出した。

6.14　尿検査

以下の動物を検査対象とした。

投与 6 週（投与 38~39 日）

：雄及び非交配群雌の各群 5 匹（雄の群内番号 8~12 番、非交配群雌の群内番号 6~10 番）

回復 2 週（回復 10~11 日）

：回復動物の全動物

採尿器をセットしたケージに動物を個別に収容し（投与 6 週検査では投与後に収容した）、絶食・自由摂水下で 4 時間尿を、次いで自由摂食・自由摂水下でその後の 20 時間尿を採取し、表 5 に記載した項目及び方法により検査した。なお、給水には給水瓶を用いた。また、尿検査時には、前日からの 1 日当たりの摂水量（単位：mL/24h）を、給水瓶を用いて重量法で測定した（1 g = 1 mL とみなした）。

表 5. 尿検査の項目、測定法及び使用機器など

1）4 時間尿についての検査	
検査項目	測定方法
pH	マルティスティックス試験紙 a)
タンパク質	マルティスティックス試験紙 a)
ケトン体	マルティスティックス試験紙 a)
グルコース	マルティスティックス試験紙 a)
潜血	マルティスティックス試験紙 a)
ビリルビン	マルティスティックス試験紙 a)
ウロビリノーゲン	マルティスティックス試験紙 a)
色調	肉眼観察
沈渣	鏡検法
尿量（4 時間量）注 1	容量測定（単位：mL）
2）20 時間尿についての検査	
検査項目	測定方法
尿量（20 時間量）注 1	容量測定（単位：mL）
浸透圧	氷点降下法 b)（単位：mOsm/kg）
ナトリウム注 2	イオン選択電極法 c)（単位：mmol/24h）
カリウム注 2	イオン選択電極法 c)（単位：mmol/24h）
塩素注 2	イオン選択電極法 c)（単位：mmol/24h）
使用測定機器 a)：尿自動分析装置　クリニテック 500（Siemens Healthcare Diagnostics Inc.） b)：自動浸透圧測定装置　オズモステーション OM-6060（株式会社アークレイファクトリー） c)：臨床化学自動分析装置　TBA-120FR 形（キヤノンメディカルシステムズ株式会社）	
注 1：4 時間の尿量と 20 時間の尿量を合計して 24 時間の尿量（mL/24h）を算出した。 注 2：20 時間尿について濃度を測定し、測定濃度と 24 時間の尿量から 1 日当たりの排泄量を算出した。	

6.15　血液学検査

全動物について剖検前日（最終投与日あるいは回復 14 日）から一夜（16~21 時間）絶食させた。雄及び交配群雌並びに非交配群雌の各群 5 匹（動物番号が若い順、ただし、交配群雌は分娩順の 5 匹）について、イソフルラン麻酔下に開腹し、腹大動脈から EDTA-2K 加採血瓶（SB-41：シスメックス株式会社）に血液（約 1 mL）を採取した。得られた血液について表 6-1）に記載した項目及び方法により検査した。なお、鏡検による確認に備え、採血した全例について、May-Grünwald-Giemsa 染色法による血液塗抹標本を作製したが、鏡検しなかった。更に、凝固系の検査用として血液（0.9 mL）を 3.8%クエン酸ナトリウム溶液加試験管（血液 9 容に対し 1 容の割合）に採取し、遠心分離（3,000 rpm、約 1,600×g、10 分間）により得られた血漿について表 6-2）に記載した項目及び方法により検査した注）。交尾不成立雌動物及び妊娠 25 日未分娩動物についても検査した。ただし、その成績は帳票には反映しなかった。

注）：授乳 14 日の 15 mg/kg 群の 1 例（動物番号:3111）の APTT の測定において、凝固時間短縮に起因するエラーが表示されたため、データ取得時間を拡張した設定で再測定を実施し、再測定値を採用した。

表 6. 血液学検査の項目、測定法及び使用機器など

1）EDTA-2K 加血液についての検査		
検査項目	測定方法	単位
赤血球数(RBC)	フローサイトメトリー法 a)	10^4(E4)/μL
ヘモグロビン濃度(HGB)	シアンメトヘモグロビン変法 a)	g/dL
ヘマトクリット値(HCT)	RBC 及び MCV から算出 a)	%
平均赤血球容積(MCV)	フローサイトメトリー法 a)	fL
平均赤血球ヘモグロビン量(MCH)	RBC 及び HGB から算出 a)	pg
平均赤血球ヘモグロビン濃度(MCHC)	HGB 及び HCT から算出 a)	g/dL
赤血球容積分布幅(RDW)	赤血球容積ヒストグラムの標準偏差と MCV から算出 a)	%
網赤血球数(RETIC)	フローサイトメトリー法 a)	10^9(E9)/L
血小板数(PLT)	フローサイトメトリー法 a)	10^4(E4)/μL
白血球数(WBC)	フローサイトメトリー法 a)	10^2(E2)/μL
白血球分類注	フローサイトメトリー法 a)	10^2(E2)/μL
2）クエン酸ナトリウム加血液から分離した血漿についての検査（凝固系検査）		
検査項目	測定方法	単位
プロトロンビン時間(PT)	Coagulometric test b)	s
活性化部分トロンボプラスチン時間(APTT)	Coagulometric test b)	s
フィブリノーゲン量(FIB)	Coagulometric test b)	mg/dL
使用測定機器 a)：総合血液学検査装置　アドヴィア 2120i（Siemens Healthcare Diagnostics Inc.） b)：血液凝固自動測定装置　ACL Elite Pro（Instrumentation Laboratory）		
注：リンパ球(LYMP)、好中球(NEUT)、好酸球(EOS)、好塩基球(BASO)、単球(MONO)及び大型非染色球(LUC)		

6.16　血液化学検査

血液学検査のための採血と同時に、ヘパリン加試験管（ベノジェクト II ヘパリンナトリウム、5 mL 採血用：テルモ株式会社）に採取した血液（約 3 mL）を遠心分離（3,000 rpm、約 1,600×g、10 分間）し、上清を同じ条件で更に遠心して得られた血漿について、表 7 に記載の項目及び方法により検査した。交尾不成立雌動物及び妊娠 25 日未分娩動物についても検査した。ただし、その成績は帳票には反映しなかった。また、凝固促進剤入り試験管（ベノジェクト II オートセップ、6 mL 採血用：テルモ株式会社）に採取した血液（約 4 mL）を遠心分離（3,000 rpm、約 1,600×g、10 分間）し血清を得た。血清は T4（thyroxine）を測定するため、試験番号、採血時期、検査項目、試料番号、採取年月日を明記したポリプロピレン製容器に分注し（約 0.5 mL×3 本。それぞれ 1 本ずつ赤、青、緑に色分けした）、送付時まで−80°C の冷凍庫（許容範囲：−70°C 以下、実測値：−90.8°C~−81.0°C）に保存した。

表 7. 血液化学検査の項目、測定法及び使用機器など

検査項目	測定方法	単位
アスパラギン酸アミノトランスフェラーゼ(AST)	UV-rate 法 [a)]	IU/L
アラニンアミノトランスフェラーゼ(ALT)	UV-rate 法 [a)]	IU/L
アルカリホスファターゼ(ALP)	Bessey-Lowry 法 [a)]	IU/L
γ-グルタミルトランスペプチダーゼ(γ-GTP)	L-γ-グルタミル-3-カルボキシ-4-ニトロアニリド法 [a)]	IU/L
総胆汁酸(TBA)	3α-ヒドロキシステロイドデヒドロゲナーゼ(3α-HSD)法 [a)]	μmol/L
総コレステロール(T-CHO)	CEH-COD-POD 法 [a)]	mg/dL
トリグリセライド(TG)	LPL-GK-GPO-POD 法 [a)]	mg/dL
リン脂質(PL)	PLD-ChOD-POD 法 [a)]	mg/dL
総ビリルビン(T-BIL)	ビリルビンオキシダーゼ法 [a)]	mg/dL
グルコース(GLU)	グルコースデヒドロゲナーゼ法 [a)]	mg/dL
尿素窒素(BUN)	Urease-LEDH 法 [a)]	mg/dL
クレアチニン(CRNN)	Creatininase-creatinase-sarcosine oxidase-POD 法 [a)]	mg/dL
ナトリウム(Na)	イオン選択電極法 [a)]	mmol/L
カリウム(K)	イオン選択電極法 [a)]	mmol/L
塩素(Cl)	イオン選択電極法 [a)]	mmol/L
カルシウム(Ca)	OCPC 法 [a)]	mg/dL
無機リン(P)	PNP-XOD-POD 法 [a)]	mg/dL
総タンパク質(TP)	Biuret 法 [a)]	g/dL
アルブミン(ALB)	BCG 法 [a)]	g/dL
使用測定機器 a)：臨床化学自動分析装置　TBA-120FR 形（キヤノンメディカルシステムズ株式会社）		

6.17　血清中ホルモン濃度測定

6.17.1　測定対象

6.16 項で得られた雄及び交配群雌並びに非交配群雌の血清及び 6.13.2 項で得られた児動物の血清について血中ホルモン（T4）濃度を測定した。ただし、測定は雄（投与終了時）及び生後 13 日の児動物の測定を優先して実施し、測定結果に被験物質投与の影響と推定される異常がみられなかったことから、非交配群雌、授乳 14 日の母動物及び生後 4 日の児動物並びに回復動物については測定を行わなかった。3 本に分注した血清はそのうち 1 本を測定した。分注後の残余血清は血清中ホルモン濃度測定用の予備として試験施設で保存した。なお、交尾不成立雌動物及び妊娠 25 日未分娩動物の試料については測定を行わず、試験施設で廃棄した。

6.17.2　試料の送付

測定に供する血清は、凍結した状態でドライアイスを同梱させ、試験場所（試験主任者宛）に送付した。

送付試料数　：　110 サンプル（交配群雄 30 サンプル×3 本、交配群雌 20 サンプル×3 本、非交配群雌 20 サンプル×3 本、生後 13 日の児動物 20 サンプル×3 本、生後 4 日の児動物 20 サンプル）

送付日　　：2019 年 11 月 13 日（2019 年 11 月 14 日着）
；交配群雄（投与終了時）のサンプル
2019 年 12 月 9 日（2019 年 12 月 10 日着）
；上記以外のサンプル

6.17.3　血清中ホルモン（T4）濃度測定

1) ホルモン濃度測定番号
OT-190010
2) ホルモン濃度測定表題
「Ethyl ethyldimethyltetradecylammonium sulphate：ラットを用いた経口投与による反復投与毒性･生殖発生毒性併合試験（試験番号：R-1244）」におけるホルモン測定
3) 分析方法
RIA method（詳細は Attachment 5 参照）
4) 測定項目
T4
5) 作業・操作
上記測定に関する操作手順は試験場所の SOP に従って行われた。
6) ホルモン濃度測定報告書
試験場所においてホルモン濃度測定報告書が作成された。試験責任者はホルモン濃度測定報告書の PDF ファイルを入手し、当試験（R-1244）の最終報告書に添付した。また、その内容を当試験の最終報告書に反映させた。
7) 残余血清の処理
ホルモン濃度測定終了後の残余血清は、ホルモン濃度測定報告書作成後に試験責任者の指示に基づいて試験場所で廃棄した。

6.18　病理学検査

6.18.1　剖検

最終投与翌日及び回復期間終了日に、血液学検査、血液化学検査及び血清中ホルモン濃度測定のために採血した動物は採血後、その他の動物はイソフルラン麻酔下で、腹大動脈切断により放血致死させ、外表及び全ての器官/組織を詳細に観察した。交尾不成立雌動物及び妊娠 25 日未分娩動物については、採血して放血致死させた後、剖検を行った。なお、母動物については剖検時に着床痕数を数えた。

6.18.2　器官重量

全動物について、表 8 に示す器官の重量（絶対重量）を測定するとともに、絶対重量と剖検日の体重から体重 100 g 当たりの相対重量を算出した。両側性の器官（精嚢を除く）については左右別々に測定し、その合計値で評価した。なお、交尾不成立雌

動物及び妊娠 25 日未分娩動物については、帳票には反映しなかった。

6.18.3　病理組織学検査

検査対象器官/組織を表 8 に示した。全ての成熟動物について全検査対象器官/組織をリン酸緩衝 10%ホルマリン液で固定した。ただし、眼球及び視神経はリン酸緩衝 3%グルタルアルデヒド・2.5%ホルマリン液で固定、精巣及び精巣上体はブアン液で固定した後、リン酸緩衝 10%ホルマリン液で保存した。以降の検査は次の通りとした。

1) パラフィン包埋及びヘマトキシリン･エオジン（H･E）染色標本作製
以下に記載した動物の全検査対象器官/組織について標本作製した。
- 投与終了時及び回復終了時の計画剖検時に採血を実施した雄及び交配群雌並びに非交配群雌の各群 5 匹（動物番号が若い順、ただし、交配群雌は分娩順の 5 匹）
- 妊娠 25 日未分娩動物、その交配相手雄（未分娩動物が不妊の場合のみ）
- 交尾不成立雌雄動物

甲状腺に関して、被験物質投与による変化が疑われなかったため（親動物に組織学変化及び甲状腺重量の変動は認められなかったため）、採血を実施しなかった雄及び交配群雌並びに雌雄の生後 13 日児動物（全母体の各腹雌雄各 1 例）についての標本作製は行わなかった。

2) 病理組織学検査
鏡検は以下の通り実施した。
＜投与終了時剖検群＞
媒体対照群及び高用量群
：全検査対象器官/組織
中及び低用量群　：高用量群において被験物質投与による変化はみられなかったため、鏡検は実施しなかった。
＜回復終了時剖検群＞
全群　：全検査対象器官/組織
＜妊娠 25 日未分娩動物、その交配相手雄（未分娩動物が不妊の場合のみ）、交尾不成立雌雄動物＞
全群　：全検査対象器官/組織
＜計画剖検時に採血を実施しなかった雄及び交配群雌並びに生後 13 日児動物＞
被験物質投与による変化が疑われなかったため、甲状腺の鏡検は実施しなかった。

表 8.病理学検査対象器官/組織

器官/組織	病理組織学検査 （HE 染色）	器官重量測定
大脳	√	√ （脳として）
小脳	√	
橋	√	
坐骨神経	√*	
脊髄（胸部）	√	
眼球	√*	
視神経	√*	
ハーダー腺	（保存のみ・両側）	
下垂体	√	
甲状腺	√*	√ （甲状腺として）
上皮小体	√*#	
副腎	√*	√
胸腺	√	√
脾臓	√	√
顎下リンパ節	√*	
腸間膜リンパ節	√	
心臓	√	√
胸大動脈	（保存のみ）	
気管	√	
肺（気管支を含む）	√	
舌	（保存のみ）	
喉頭	（保存のみ）	
食道	（保存のみ）	
胃	√	
十二指腸	√	
空腸	√	
回腸（パイエル板を含む）	√	
盲腸	√	
結腸	√	
直腸	√	
顎下腺	√*	
舌下腺	（保存のみ・両側）	
肝臓	√	√
膵臓	√	
腎臓	√*	√
膀胱	√	
精巣/卵巣	√/√	√/√
精巣上体/子宮	√/√	√/√
前立腺/腟	√/√	√/-
精嚢（凝固腺含む）	√	√
皮膚（鼠径部）	√*	
乳腺（鼠径部）	√*	
胸骨（骨髄を含む）	（保存のみ）	
大腿骨（骨髄を含む）	√*	
大腿部骨格筋	√*	
肉眼的異常部位	√	

器官/組織	病理組織学検査 （HE 染色）	器官重量測定
肛門挙筋・球海綿体筋（LABC）	（重量測定のみ）	√
尿道球腺（COW）	（重量測定のみ）	√
陰茎亀頭（GP）	（重量測定のみ）	√

他に個体識別部（耳標を装着した耳介）を摘出し保存した。
各項目該当ある場合は√で示した。
*： 両側を摘出し、片側を鏡検した（他の両側性器官は両側を鏡検）。
#： 上皮小体は微小な器官であるため両側の標本作製を試み、片側を鏡検した。各群 80%以上の動物で鏡検が可能であったため、標本の再作製は行わなかった。

7. データ採取に使用したコンピュータシステム

- MiTOX-BOZO システム（Version 9.3.1.1、三井 E&S システム技研株式会社）
- PATHOS5 システム（Pathology Operating Systems Ltd.）

7.1 統計解析

7.1.1 パラメータの算出

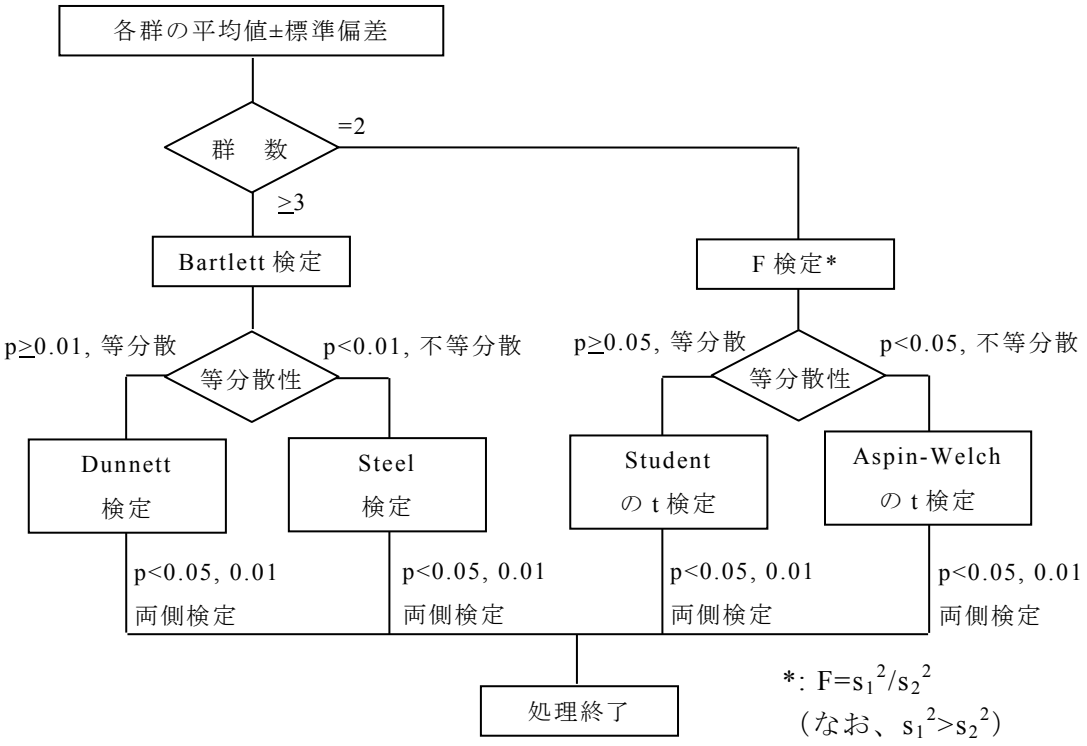
性周期異常率、交尾率、受胎率、出産率、異常児を有する母動物発現率、生後 0 及び 4 日の性比を群ごとに、妊娠期間、着床後死亡率、分娩率、出生率、外表異常率、生後 4 及び 13 日生存率を母動物（腹）ごとに、以下の式により算出した。なお、出生児の体重及び AGD については母動物ごとに雌雄別に平均値を求めた。この際、AGD は生後 0 日の体重の三乗根で除して標準化（小数点以下第 1 位まで表示）した。雄生存児の乳頭/乳輪数は母動物（腹）ごとに平均値を求めた。

性周期異常率(%) =（性周期異常を示した動物数/観察雌動物数）×100
交尾率(%) =（交尾動物数/同居動物数）×100
（雌又は雄の）受胎率(%) =（妊娠した雌の数（又は雌を妊娠させた雄の数）
/交尾した雌（又は交尾した雄）の数）×100
出産率(%) =（生児出産雌数/妊娠雌数）×100
異常児を有する母動物発現率（%）=（異常児を有する母動物数/母動物数）×100
外表異常率(%) =（外表異常児数/出産児数）×100
生後 0 日の性比(%) =（雄出生児数/出生児数）×100
生後 4 日の性比(%) =（生後 4 日の雄生存児数/生後 4 日の生存児数）×100
妊娠期間(日) = 妊娠 0 日から分娩した日までの日数
着床後死亡率(%) =〔（着床痕数-出生児数）/着床痕数〕×100
分娩率(%) =（出産児数/着床痕数）×100
出生率(%) =（出生児数/出産児数）×100
生後 4 日生存率(%) =（生後 4 日の生存児数/出生児数）×100
生後 13 日生存率(%) =（生後 13 日の生存児数/生後 4 日調整後の児数）×100

7.1.2 検定

媒体対照群と各被験物質投与群との間で検定を行った。解析には、統合統計解析システム SAS Release 9.1.3 (SAS Institute Inc.)を使用した。なお、交尾不成立雌は交尾率にのみ含め、交配開始後のデータは試験成績から除外した。

1) 体重、体重増加量（雄及び非交配群雌：投与 1~42 日及び回復 1~14 日、交配群雌：投与 1~15 日、妊娠 0~20 日及び授乳 0~13 日、出生児：生後 0~13 日）、摂餌量（交配前投与期間、回復期間又は妊娠期間及び授乳期間中の総摂餌量含む）、オープンフィールド内観察における排糞数と立ち上がり回数、握力及び自発運動量、尿検査の定量的項目及び摂水量、血液学検査、血液化学検査及び器官重量（含、剖検時体重）、発情期発現回数、性周期（発情周期）、交尾までに要した日数、妊娠期間、着床痕数、出産児数、出生児数、死産児数、生存児数、AGD、乳頭/乳輪数は、群ごとに平均値及び標準偏差を求めた。動物ごとに得られた値あるいは平均値を 1 標本単位とし、下記の模式図に従って検定した [3),4),5)]。



2) 着床後死亡率、分娩率、出生率、生後 4 及び 13 日生存率については、母動物ごとに得られた率を 1 標本単位とし、群ごとに平均値及び標準偏差を求め、Wilcoxon の順位和検定を行った（有意水準 0.05 及び 0.01、両側）[6)]。なお、いずれの群にも外表異常児はみられなかったため、外表異常率について検定は行わなかった。

3) 性周期異常率、交尾率、雌雄の受胎率、出産率、異常児を有する母動物発現率及び児の性比は、各群の性周期異常を示した動物数、交尾動物数、雌を妊娠させた雄動物数、妊娠雌動物数、出生児出産雌動物数、異常児を有する母動物数、雌雄児数に基づき、Fisher の直接確率計算法により検定を行った（有意水準 0.05 及び 0.01、両側）[7)]。

8. 試験結果

8.1 一般状態

結果を Table 1-1~1-11、Appendix 1-1~1-32 に示した。

1) 投与期間

雄及び非交配群雌では、投与期間を通じ、いずれの動物にも異常はみられなかった。

交配群雌では、交配前、妊娠及び授乳期の各投与期間を通じ、いずれの動物にも分娩/哺育状態を含め異常はみられなかった。

2) 回復期間

回復期間を通じ、いずれの動物にも異常は認められなかった。

8.2 詳細な一般状態の観察、機能検査、握力測定及び自発運動量の測定

8.2.1 詳細な一般状態の観察

8.2.1.1 ケージ内観察

結果を Table 2-1~2-24、Appendix 2-1~2-76 に示した。

1) 投与期間

いずれの動物にも妊娠中及び授乳中を含め、被験物質投与に関連すると考えられる異常はみられなかった。

2) 回復期間

いずれの動物にも被験物質投与に関連すると考えられる異常はみられなかった。

8.2.1.2 手に持っての観察

結果を Table 2-25~2-86、Appendix 2-77~2-152 に示した。

1) 投与期間

いずれの動物にも妊娠中及び授乳中を含め、被験物質投与に関連すると考えられる異常はみられなかった。

2) 回復期間

いずれの動物にも被験物質投与に関連すると考えられる異常はみられなかった。

8.2.1.3 オープンフィールド内観察

結果を Table 2-87~2-158、Appendix 2-153~2-304 に示した。

1) 投与期間
いずれの動物にも妊娠中及び授乳中を含め、被験物質投与に関連すると考えられる異常はみられず、立ち上がり回数及び排糞の個数とも各被験物質投与群と媒体対照群との間に有意な差は認められなかった。
2) 回復期間
いずれの動物にも被験物質投与に関連すると考えられる異常はみられず、立ち上がり回数及び排糞の個数も媒体対照群と 50 mg/kg 群との間に有意な差は認められなかった。

8.2.2 機能検査

結果を Table 2-159~2-163、Appendix 2-305~2-318 に示した。

1) 投与期間終了週検査
いずれの動物にも聴覚反応、接近反応、接触反応、痛覚反応、瞳孔反射及び空中正向反射に被験物質投与に関連すると考えられる異常はみられなかった。
2) 回復期間終了週検査
いずれの動物にも聴覚反応、接近反応、接触反応、痛覚反応、瞳孔反射及び空中正向反射に被験物質投与に関連すると考えられる異常はみられなかった。

8.2.3 握力

結果を Table 2-164~2-168、Appendix 2-319~2-332 に示した。

1) 投与期間終了週測定
雄、交配群雌及び非交配群雌では、各被験物質投与群と媒体対照群との間に有意な差は認められなかった。
2) 回復期間終了週測定
雄及び非交配群雌では、50 mg/kg 群と媒体対照群との間に有意な差は認められなかった。

8.2.4 自発運動量

結果を Fig. 1~5、Table 2-169~2-173、Appendix 2-333~2-346 に示した。

1) 投与期間終了週測定
雄及び非交配群雌では、各被験物質投与群と媒体対照群との間に有意な差は認められなかった。なお、交配群雌では、5 mg/kg 群で授乳 13 日の測定開始後 10~20 分の運動量に媒体対照群と比べ有意な低値が認められたが、用量に関連しない変化であり、偶発的な有意差と判断した。
2) 回復期間終了週測定
雄及び非交配群雌では、50 mg/kg 群と媒体対照群との間に有意な差は認められなかった。

8.3　体重

結果を Fig. 6~8、Table 3-1~3-7、Appendix 3-1~3-22 に示した。

1) 投与期間

雄では、投与期間を通じ、各被験物質投与群と媒体対照群との間に有意な差は認められなかった。

交配群雌では、交配前、妊娠及び授乳期の各投与期間を通じ、各被験物質投与群と媒体対照群との間に有意な差は認められなかった。

非交配群雌では、投与期間を通じ、50 mg/kg 群と媒体対照群との間に有意な差は認められなかった。

2) 回復期間

50 mg/kg 群では、雌雄ともに回復期間を通じ、媒体対照群との間に有意な差は認められなかった。

8.4　摂餌量

結果を Fig. 9~11、Table 4-1~4-9、Appendix 4-1~4-28 に示した。

1) 投与期間

雄では、50 mg/kg 群で媒体対照群と比べ投与 2 及び 8 日に有意な低値が認められ、交配前投与期間中の総摂餌量が有意な低値を示した。

交配群雌では、50 mg/kg 群で媒体対照群と比べ投与 2 日に有意な低値が認められたが、交配前投与期間中の総摂餌量には有意な差は認められなかった。妊娠及び授乳期の各投与期間を通じ、各被験物質投与群と媒体対照群との間に有意な差は認められなかった。

非交配群雌では、投与期間を通じ、50 mg/kg 群と媒体対照群との間に有意な差は認められなかった。

2) 回復期間

50 mg/kg 群では、雌雄ともに回復期間を通じ、媒体対照群との間に有意な差は認められなかった。

8.5　尿検査（摂水量測定を含む）

結果を Table 5-1~5-21、Appendix 5-1~5-30 に示した。

1) 投与期間終了週検査

定性項目については、雄及び非交配群雌とも異常はみられなかった。

定量項目については、雄の 50 mg/kg 群で媒体対照群と比べナトリウム及びカリウムに有意な低値が認められた。

2) 回復期間終了週検査

定性項目については、いずれの動物にも異常はみられなかった。

定量項目については、いずれの検査項目においても 50 mg/kg 群の雌雄とも媒体対照群との間に有意な差は認められなかった。

8.6 血液学検査

結果を Table 6-1~6-5、Appendix 6-1~6-14 に示した。

1) 投与期間終了時検査

雄では、50 mg/kg 群で媒体対照群と比べ MCHC に有意な高値が認められたが、媒体対照群と比べ 1%程度と軽微な変動であり、試験施設の背景データ（Mean ± SD、34.5 ± 0.8、n=247、2014-2019 年）の範囲内であることから、生理的変動範囲内の変化で偶発的有意差と判断した。なお、5 mg/kg 群で媒体対照群と比べ EOS に有意な高値が認められたが、用量に関連しない変化であり、偶発的な有意差であると判断した。

交配群雌では、いずれの検査項目においても各被験物質投与群と媒体対照群との間に有意な差は認められなかった。

非交配群雌では、いずれの検査項目においても 50 mg/kg 群と媒体対照群との間に有意な差は認められなかった。

2) 回復期間終了時検査

雄では、50 mg/kg 群で媒体対照群と比べ MCV 及び MCH に有意な高値が認められたが、いずれも媒体対照群と比べ 4%程度と軽微な変動であり、試験施設の背景データ（Mean ± SD、MCV : 51.1 ± 1.8、MCH : 17.6 ± 0.6、n=247、2014-2019 年）の範囲内であることから、生理的変動範囲内の変化で偶発的有意差と判断した。

非交配群の雌では、50 mg/kg 群で媒体対照群と比べ HCT に有意な高値が認められたが、媒体対照群と比べ 4%程度と軽微な変動であり、試験施設の背景データ（Mean ± SD、41.9 ± 1.7、n=230、2014-2019 年）の範囲内であることから、生理的変動範囲内の変化で偶発的有意差と判断した。また、LUC に有意な低値が認められたが、白血球数に異常はなく、試験施設の背景データ（Mean ± SD、0.4 ± 0.3、n=230、2014-2019 年）の範囲内であることから、生理的変動範囲内の変化で偶発的有意差と判断した。

8.7 血液化学検査

結果を Table 7-1~7-5、Appendix 7-1~7-14 に示した。

1) 投与期間終了時

雄では、50 mg/kg 群で媒体対照群と比べ AST、ALT 及び CRNN に有意な高値が認められた。

交配群雌では、いずれの検査項目においても各被験物質投与群と媒体対照群との間に有意な差は認められなかった。

非交配群雌では、いずれの検査項目においても 50 mg/kg 群と媒体対照群との間に有意な差は認められなかった。

2) 回復期間終了時

雄では、50 mg/kg 群で媒体対照群と比べ T-BA に有意な低値が、TG に有意な高

値が認められたが、いずれも関連するパラメータに異常はなく、試験施設の背景データ（Mean ± SD、T-BA ; 17.1 ± 7.5、n=50、TG ; 66 ± 28、n=237、2014-2019年）の範囲内であることから、生理的変動範囲内の変化で偶発的有意差と判断した。

非交配群雌では、いずれの検査項目においても 50 mg/kg 群と媒体対照群との間に有意な差は認められなかった。

8.8 血清中ホルモン濃度測定

結果をホルモン濃度測定報告書（Attachment 5）に示した。

1) 交配群雄投与期間終了時

T4 濃度には、各被験物質投与群と媒体対照群との間に有意な差は認められなかった。

2) 生後 13 日齢児

T4 濃度には、各被験物質投与群と媒体対照群との間に有意な差は認められなかった。

8.9 器官重量

結果を Table 8-1~8-8、Appendix 8-1~8-30 に示した。

1) 投与期間終了時

雄では、50 mg/kg 群で媒体対照群と比べ副腎の絶対及び相対重量に有意な高値が認められた。

交配群雌では、15 mg/kg 群で媒体対照群と比べ心臓及び卵巣の相対重量に有意な低値が認められたが、用量に関連しない変化であり、偶発的な有意差と判断した。

非交配群雌では、いずれの器官においても 50 mg/kg 群と媒体対照群との間に有意な差は認められなかった。

2) 回復期間終了時

いずれの器官においても 50 mg/kg 群の雌雄とも媒体対照群との間に有意な差は認められなかった。

8.10 剖検所見

結果を Table 9-1~9-6、Appendix 9-1~9-116 に示した。

1) 投与期間終了時及び回復期間終了時検査

交配群雌雄及び非交配群雌のいずれの動物にも被験物質投与の影響と考えられる肉眼所見はみられなかった。なお、いくつかの臓器に肉眼的変化がみられたが、その病理学的性状又は発現状況から被験物質投与に関連しない偶発的変化と考えられた。

2) 交尾不成立雌動物及び妊娠 25 日未分娩動物
交尾が成立しなかった 15 及び 50 mg/kg 群の雌各 1 例（動物番号 3102 及び 4102）並びに妊娠 25 日までに分娩しなかった媒体対照群及び 15 mg/kg 群の各 1 例（動物番号 1112 及び 3105）では、いずれの臓器にも肉眼的異常はみられなかった。

8.11 病理組織学検査

結果を Table 10-1~10-21、Appendix 9-1~9-116 に示した。

1) 投与期間終了時及び回復期間終了時検査
交配群雌雄及び非交配群雌のいずれの動物にも被験物質投与の影響と考えられる病理組織学所見はみられなかった。

2) 交尾不成立雌動物並びに妊娠 25 日未分娩動物及びその交配相手雄
交尾不成立雌動物（動物番号 3102、4102）、妊娠 25 日未分娩動物（動物番号 1112、3105）及びその交配相手雄（動物番号 1012、交配相手が不妊）では、いずれも被験物質投与の影響と考えられる変化はみられず、更に不妊又は分娩しなかった原因と考えられる組織学的変化もみられなかった。

8.12 性周期

結果を Table 11、Appendix 10-1~10-8 に示した。

いずれの動物にも性周期異常はみられず、性周期異常率、発情期発現回数及び平均性周期（発情周期）には、各被験物質投与群と媒体対照群との間に有意な差は認められなかった。

8.13 交配成績

結果を Table 12-1 及び 12-2、Appendix 11-1~11-8 に示した。

交尾不成立であった 15 及び 50 mg/kg 群の各 1 例を除き、交配 8 日までに全例の交尾が成立し、交尾までに要した日数、交尾率及び受胎率には各被験物質投与群と媒体対照群との間に有意な差は認められなかった。

8.14 分娩成績並びに分娩及び哺育状態

結果を Table 13、14、Appendix 12-1~12-4、13-1~13-4 並びに Table 1-5~1-7、Appendix 1-17~1-28 に示した。

妊娠期間、出産率、着床痕数、着床後死亡率、出生率、出産児数、出生児数、性比（生後 0 日）及び死産児数に各被験物質投与群と媒体対照群との間で有意な差は認められなかった。また、いずれの群にも外表異常児はみられなかった。

妊娠動物の分娩状態では、妊娠 25 日に至っても未分娩であった 15 mg/kg 群の 1 例（動物番号 3105）を除き、妊娠 21.5 から 23.5 日に全例が分娩し、胎盤及び羊膜の処理は正常に行われた。哺育状態では、いずれの母動物にも児集め、営巣及び授乳行動に異常はみられなかった。なお、妊娠 25 日に至っても未分娩であった媒体対照群の 1

例（動物番号 1112）は着床痕を確認できず不妊であったが、被験物質投与とは無関係であった。

8.15　出生児の Anogenital Distance (AGD)

結果を Table 15、Appendix 14-1~14-4 に示した。

生後 0 日の AGD には被験物質投与に関連すると考えられる変化は認められなかった。なお、媒体対照群と比べ 15 mg/kg 群の雌の AGD と 50 mg/kg 群の雌の標準化 AGD に有意な低値が認められたが、いずれも僅かな低値であり、個体別値で媒体対照群の範囲を下回ったのはいずれも 1 例のみであることから、偶発的な有意差と考えられた。

8.16　出生児の生存性

結果を Table 16、Appendix 15-1~15-4 に示した。

生後 4 及び 13 日の生存児数及び生存率には各被験物質投与群と媒体対照群との間に有意な差は認められなかった。

8.17　出生児の性比

結果を Table 17、Appendix 16-1~16-4 に示した。

生後 4 日の性比には各被験物質投与群と媒体対照群との間に有意な差は認められなかった。

8.18　出生児の体重

結果を Table 18-1 及び 18-2、Appendix 17-1~17-8 に示した。

出生児の雌雄体重並びに生後 0~4 日及び 4~13 日の間の体重増加量には、各被験物質投与群と媒体対照群との間に有意な差は認められなかった。

8.19　死亡児の肉眼観察所見

結果を Table 19、Appendix 18-1~18-4 に示した。

いずれの死亡児にも肉眼的異常はみられなかった。

8.20　雄新生児の乳頭/乳輪数

結果を Table 20、Appendix 19-1~19-4 に示した。

雄新生児の乳頭/乳輪数には各被験物質投与群と媒体対照群との間に有意な差は認められず、被験物質投与の影響と考えられる変化はみられなかった。

8.21　出生児の生後 13 日剖検所見

結果を Table 21、Appendix 20-1~20-4 に示した。

いずれの動物にも肉眼的異常はみられなかった。

8.22　出生児の器官重量

結果を Table 22-1 及び 22-2、Appendix 21-1~21-8 に示した。

甲状腺重量には雌雄いずれも各被験物質投与群と媒体対照群との間に有意な差は認められなかった。

9.　考察

Ethyl ethyldimethyltetradecylammonium sulphate の 0（媒体対照群 : 注射用水）、5、15 及び 50 mg/kg を Sprague-Dawley 系 SPF ラットの雄には交配前 14 日間に加え交配期間を通して剖検前日まで（42 日間）、雌には交配前 14 日間に加え交配期間及び妊娠期間を通して授乳 13 日まで（51~58 日間）、非交配群雌には 42 日間、それぞれ強制経口投与し、反復投与毒性及び生殖発生毒性を検討した。更に、0 及び 50 mg/kg 群の一部の動物については、雌雄ともに 42 日間投与した後 14 日間の回復期間を設け、毒性変化の可逆性を検討した。

9.1　反復投与毒性

いずれの投与群においても死亡動物はみられず、一般状態、詳細な一般状態観察、機能検査、握力、自発運動量、体重、尿検査の定性項目、血液学検査、血清中ホルモン(T4)、甲状腺重量、雌雄の生殖器重量、剖検及び病理組織学検査には被験物質投与の影響は認められなかった。

摂餌量では、50 mg/kg の雄及び交配群雌で投与 2 日（投与開始翌日）の摂餌量に、加えて雄で投与 8 日の摂餌量と交配前投与期間中（投与 1~15 日）の総摂餌量に、それぞれ低値が認められたが、投与初期に限定的で体重に関連した変化はみられないことから、毒性学的意義は乏しいと判断した。

尿検査では、雄の 50 mg/kg 群で投与 6 週に尿中ナトリウム及びカリウムの低値が認められた。この変化は回復 2 週には消失し、回復性がみられた。

血液化学検査では、雄の 50 mg/kg 群で投与終了時に AST、ALT 及び CRNN の高値が認められた。AST、ALT については，主に肝臓や胆管の細胞が障害されることで高値となることや CRNN は腎障害による老廃物の除去能の低下を反映し高値となることが知られている。本試験では、肝臓及び腎臓の器官重量及び病理組織に異常はみられていないが、腎障害を示唆すると考えられる尿中ナトリウム及びカリウムの低値がみられており、これら 3 種の血液マーカーが本剤の毒性を最も鋭敏に捉えている可能性が考えられた。これらの変化は回復期間終了時には消失し、回復性がみられた。

器官重量では、雄の 50 mg/kg 群で投与終了時に副腎重量の高値が認められたが、病理組織に異常はみられないことから、毒性学的意義は乏しいと判断した。この変化は回復期間終了時には消失し、回復性がみられた。

9.2　生殖発生毒性

50 mg/kg 群においても雌雄動物の生殖機能に関するパラメータに被験物質投与の影響は認められないことから、雌雄動物の交尾能、授精能及び受胎能、母動物の妊娠維持、分娩及び哺育行動などへの影響はないと判断した。

50 mg/kg 群においても、出生児のいずれの検査項目にも被験物質投与による影響は認められないことから、児の子宮内発生、生後の発育及び分化並びに生存性などへの影響はないと判断した。

これらの結果から、本試験条件下で Ethyl ethyldimethyltetradecylammonium sulphate を反復経口投与することにより、被験物質に起因すると考えられる主な変化として 50 mg/kg 群の雌雄で一過性の摂餌抑制、雄で尿中ナトリウム及びカリウムの減少、AST、ALT 及び CRNN の高値、副腎重量の高値が認められた。したがって、本被験物質の反復投与毒性に対する無毒性量は雄で 15 mg/kg、雌で 50 mg/kg と判断した。一方、生殖発生毒性に対する無毒性量は、雄親動物、母動物及び児動物のいずれも影響が認められないことから、いずれも 50 mg/kg と判断した。

10. 参考文献

1) [redacted] Ethyl ethyldimethyltetradecylammonium sulphate：特性試験並びに LC/MS 法による被験液中濃度測定法バリデーション及び安定性試験（媒体：注射用水）（株式会社ボゾリサーチセンター、試験番号：A-3092、2020 年）
2) [redacted] Ethyl ethyldimethyltetradecylammonium sulphate：ラットを用いた 14 日間反復経口投与毒性試験（投与量設定試験）（株式会社ボゾリサーチセンター、試験番号：N-R084、2020 年）
3) [redacted] Statistical methods. 8th ed. Ames: Iowa State University Press; 1989.
4) [redacted]New tables for multiple comparisons with a control. Biometrics 20: 482-91. 1964.
5) [redacted]A multiple comparison rank sum test: Treatments versus control. Biometrics 15: 560-72. 1959.
6) [redacted]Nonparametric statistics for the behavioral sciences. 2nd ed. New York: McGraw-Hill; 1988.
7) 佐久間昭（1981）：薬効評価－計画と分析–II, pp.23-27, 387-389, 東京大学出版会, 東京.

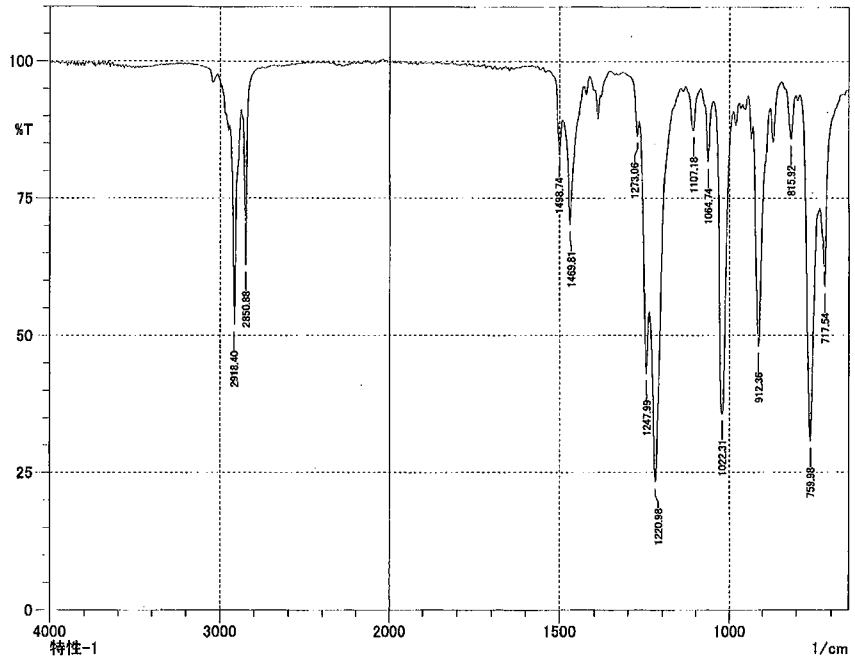
R-1244
Attachment 1

試験成績書
[Ethyl ethyldimethyltetradecylammonium sulphate の特性]

試験番号　：　A-3092
測定日　：　2019 年 9 月 3 日
被験物質　：　Ethyl ethyldimethyltetradecylammonium sulphate
ロット番号　：　[redacted]

測定方法　：　赤外吸収スペクトル［全反射測定法（ATR 法）］

結果　：　特性のスペクトルを以下に示す。



基準　：　「新規化学物質等に係る試験を実施する試験施設に関する基準」（平成 23 年 3 月 31 日：薬食発 0331 第 8 号、平成 23･03･29 製局第 6 号、環保企発第 110331010 号）

[redacted]　2019 年 9 月 4 日

試験責任者
株式会社ボゾリサーチセンター　御殿場研究所

COA number: R1244-S-1/2

CERTIFICATE OF ANALYSIS
(Stability of Ethyl ethyldimethyltetradecylammonium sulphate)

Study number:	R-1244
Test type:	Stability test
Date of analysis:	September 26, 2019 (Before the start of the administration period) December 6, 2019 (After the end of the administration period)
Test article:	Ethyl ethyldimethyltetradecylammonium sulphate
Lot number:	HK0390
Storage conditions:	Room temperature (acceptable range: 1°C to 30°C), light-resistant, air tight, moisture prevention
Measurement item:	Infrared absorption spectrum [attenuated total reflection method (ATR method)]
Acceptance criteria:	The spectrum after the end of the administration period is similar intensities of absorption at the same wave numbers for the main absorptions as those obtained in the spectrum before the start of the administration period.
Result:	The spectrum after the end of the administration period was similar intensities of absorption at the same wave numbers for the main absorptions as those obtained in the spectrum before the start of the administration period. The infrared absorption spectra are shown in the following pages.
Judgment:	Passed
Regulation:	"The Good Laboratory Practice for New Chemicals", (YakuShokuHatsu 0331 No. 8, Heisei 23-03-29 SeiKyoku No. 6, KanHoKiHatsu No. 110331010, the Ministry of Health, Labour and Welfare, the Ministry of Economy, Trade and Industry, and the Ministry of Environment, Japan, March 31, 2011)

[redacted] Date: March 12, 2020

[redacted]

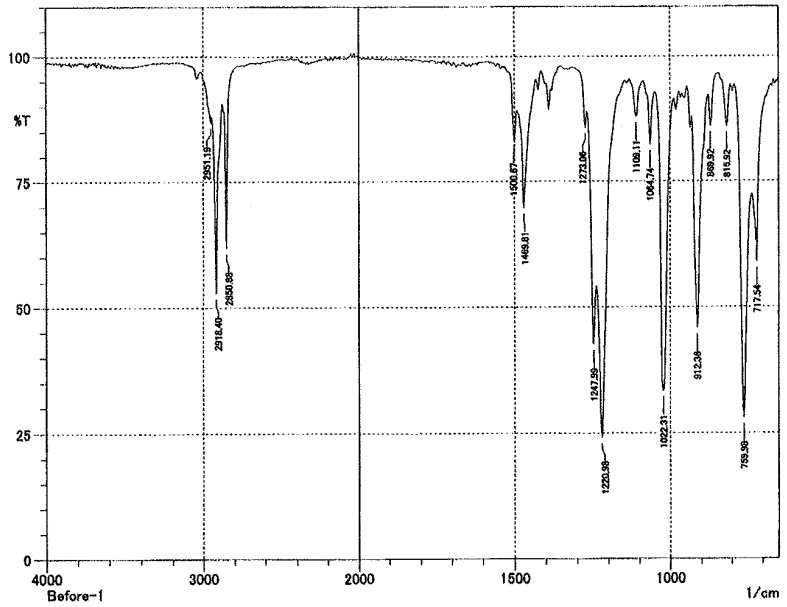
Person in Charge of Chemical Analysis
Gotemba Laboratory, BoZo Research Center Inc.

COA number: R1244-S-2/2

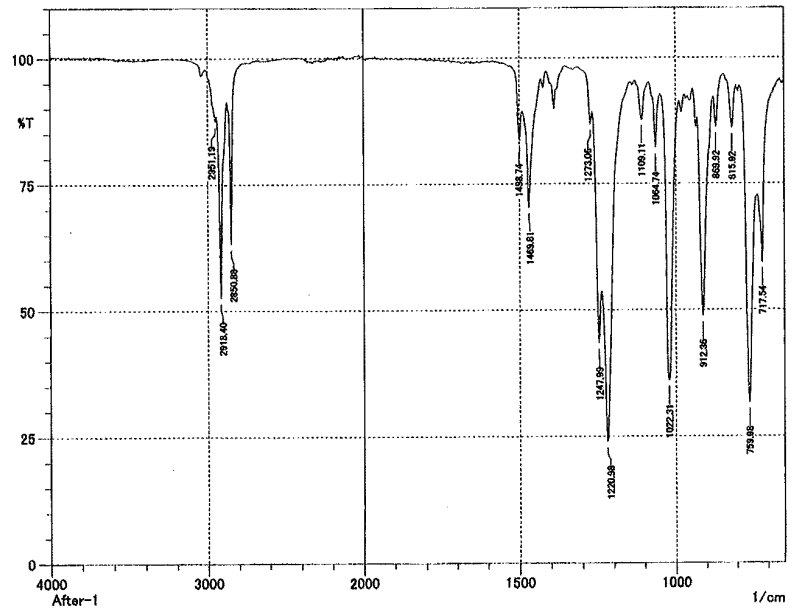
CERTIFICATE OF ANALYSIS
(Stability of Ethyl ethyldimethyltetradecylammonium sulphate)

Infrared absorption spectra:

Before the start of the administration period



After the end of the administration period



COA number: A3092-1/2

CERTIFICATE OF ANALYSIS
(Stability of Ethyl ethyldimethyltetradecylammonium sulphate in Dose Formulations)

Study number:	A-3092
Test article:	Ethyl ethyldimethyltetradecylammonium sulphate (Lot number: HK0390)
Concentration of dose formulation:	0.1 mg/mL, 10 mg/mL
Vehicle:	Water for injection
Form:	Solution
Analyte:	Ethyl ethyldimethyltetradecylammonium sulphate
Storage conditions:	Put into a brown glass bottle, stored in a refrigerator (acceptable range: 1°C to 10°C) and then at room temperature (acceptable range: 1°C to 30°C).
Storage period:	Stored at room temperature for 24 hours after storage in a refrigerator for 8 days.
Acceptance criteria	
Stability:	The residual rate [the percentage of the mean measured concentration after storage to that mean measured concentration of the preparation date (initial value: as 100)] is within 100.0% ± 10.0%.
Results:	The results are described separately.
Judgment:	Passed

COA number: A3092-2/2

CERTIFICATE OF ANALYSIS
(Stability of Ethyl ethyldimethyltetradecylammonium sulphate in Dose Formulations)

Study number: A-3092

Results:

Prepared concentration (mg/mL)		Measured concentration (mg/mL)	
		Preparation date	After storage
0.100		0.111	0.102
		0.104	0.0985
		0.109	0.0976
	Mean	0.108	0.0994
	Residual rate (%)	(100)	92.0
10.0		10.2	9.03
		10.8	9.65
		10.1	10.1
	Mean	10.4	9.59
	Residual rate (%)	(100)	92.2

Regulation:

"The Good Laboratory Practice for New Chemicals",
(YakuShokuHatsu 0331 No. 8, Heisei 23-03-29 SeiKyoku No. 6, KanHoKiHatsu No. 110331010, the Ministry of Health, Labour and Welfare, the Ministry of Economy, Trade and Industry, and the Ministry of Environment, Japan, March 31, 2011)

[redacted]

[redacted]
Study director
Gotemba Laboratory, BoZo Research Center Inc.

March 9, 2020
Date

RESULT OF ANALYSIS

Study number: R-1244
Item: Concentration
Stage: First administration
Date of analysis: September 26, 2019

Test sample
Test article: Ethyl ethyldimethyltetradecylammonium sulphate (Lot number: HK0390)
Vehicle: Water for injection
Form: Solution
Date of preparation: September 26, 2019

Analyte: Ethyl ethyldimethyltetradecylammonium sulphate

Acceptance criteria
Concentration: Proportion to nominal concentration is within 100% ± 10% (evaluation by the mean value).

Results:

Nominal concentration (mg/mL)	No.	Measured concentration (mg/mL)	Mean	Proportion to nominal concentration (%)
0.5	1	0.551	0.542	108.4
	2	0.541		
	3	0.533		
1.5	1	1.50	1.50	100.0
	2	1.59		
	3	1.42		
5	1	5.37	5.19	103.8
	2	4.99		
	3	5.22		

Judgment: Passed

RESULT OF ANALYSIS

Study number: R-1244
Item: Concentration
Stage: Final administration of male
Date of analysis: November 6, 2019

Test sample
- Test article: Ethyl ethyldimethyltetradecylammonium sulphate (Lot number: HK0390)
- Vehicle: Water for injection
- Form: Solution
- Date of preparation: November 6, 2019

Analyte: Ethyl ethyldimethyltetradecylammonium sulphate

Acceptance criteria
- Concentration: Proportion to nominal concentration is within 100% ± 10% (evaluation by the mean value).

Results:

Nominal concentration (mg/mL)	No.	Measured concentration (mg/mL)	Mean	Proportion to nominal concentration (%)
0.5	1	0.525	0.521	104.2
	2	0.526		
	3	0.513		
1.5	1	1.43	1.47	98.0
	2	1.52		
	3	1.47		
5	1	5.28	5.31	106.2
	2	5.40		
	3	5.24		

Judgment: Passed

OT-190010

原本

ホ ル モ ン 濃 度 測 定 報 告 書

「Ethyl ethyldimethyltetradecylammonium sulphate：ラットを用いた経口投与による反復投与毒性･生殖発生毒性併合試験（試験番号：R-1244）」における
ホルモン測定

OT-190010

株式会社ボゾリサーチセンター
〒151-0065　東京都渋谷区大山町 36-7

OT-190010

1. GLP 陳述書

ホルモン濃度測定番号 ： OT-190010

ホルモン濃度測定表題 ： 「Ethyl ethyldimethyltetradecylammonium sulphate：ラットを用いた経口投与による反復投与毒性・生殖発生毒性併合試験（試験番号：R-1244）」におけるホルモン測定

本作業は以下の GLP 基準を遵守して実施したものです.

- 「新規化学物質等に係る試験を実施する試験施設に関する基準」
（平成 23 年 3 月 31 日：薬食発 0331 第 8 号、平成 23・03・29 製局第 6 号、環保企発第 110331010 号）

[redacted] 2020年 3 月 16 日

試験主任者
株式会社ボゾリサーチセンター　つくば研究所

OT-190010

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3. ホルモン測定実施概要

3.1 ホルモン濃度測定番号

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3.2 ホルモン濃度測定表題

「Ethyl ethyldimethyltetradecylammonium sulphate：ラットを用いた経口投与による反復投与毒性･生殖発生毒性併合試験（試験番号：R-1244）」におけるホルモン測定

3.3 目的

「Ethyl ethyldimethyltetradecylammonium sulphate：ラットを用いた経口投与による反復投与毒性･生殖発生毒性併合試験（試験番号：R-1244）」において採取された血清中のホルモン濃度を測定することを目的とした。

3.4 遵守した基準

3.4.1 GLP

- 「新規化学物質等に係る試験を実施する試験施設に関する基準」
  （平成 23 年 3 月 31 日：薬食発 0331 第 8 号、平成 23・03・29 製局第 6 号、環保企発第 110331010 号）

3.5 試験施設

株式会社ボゾリサーチセンター　御殿場研究所
〒412-0039　静岡県御殿場市かまど 1284

3.6 試験場所

株式会社ボゾリサーチセンター　つくば研究所
〒300-2611　茨城県つくば市大久保 8 番

3.7 試験責任者

株式会社ボゾリサーチセンター　御殿場研究所　研究部門
[redacted]

3.8 試験主任者

株式会社ボゾリサーチセンター　つくば研究所　臨床検査部門
[redacted]

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3.9 担当者

測定担当者 ：[redacted]

3.10 日程

試料受領日	2019年11月14日、2019年12月10日
測定期間	2019年11月18日～2019年12月11日
ホルモン濃度測定報告書作成日	2020年3月16日

3.11 試験成績の信頼性に影響を及ぼしたと思われる環境要因

該当事象はなかった。

3.12 資料の保存

以下のホルモン濃度測定関係資料をファイルに綴じ込み、株式会社ボゾリサーチセンターつくば研究所の資料保存施設に保存する。その期間はホルモン濃度測定報告書作成後5年間とする。期間終了後の取扱いについては、試験施設と株式会社ボゾリサーチセンターつくば研究所の間で協議し、その処置を決定する。

1) ホルモン濃度測定計画書の原本
2) ホルモン濃度測定計画書変更書の原本
3) 試験計画書の写し
4) 試験計画書変更書の写し
5) 生データ及びその他の記録文書
6) ホルモン濃度測定報告書の原本
7) 通信記録

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3.13　試験主任者の署名

[redacted]　2020年　3月　16日

株式会社ボゾリサーチセンター　つくば研究所

OT-190010

4. 要約

「Ethyl ethyldimethyltetradecylammonium sulphate：ラットを用いた経口投与による反復投与毒性・生殖発生毒性併合試験（試験番号：R-1244）」において採取されたEOA（交配群投与終了時雄動物）及びPD13（生後13日児動物）の血清中のホルモン（T4）濃度を測定した。

その結果、T4濃度は媒体対照群と全ての投与群との間に有意差は認められなかった。

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5. 試験構成

5.1 概要

試験番号 R-1244（Ethyl ethyldimethyltetradecylammonium sulphate：ラットを用いた経口投与による反復投与毒性・生殖発生毒性併合試験）の群構成を下表に示す。

群構成表（雄）

試験群	投与量 (mg/kg)	交配群			
		投与終了時剖検群		回復終了時剖検群	
		動物数	動物番号	動物数	動物番号
媒体対照	0	7	1001-1007	5	1008-1012
低用量	5	12	2001-2012		
中用量	15	12	3001-3012		
高用量	50	7	4001-4007	5	4008-4012

群構成表（雌）

試験群	投与量 (mg/kg)	交配群		非交配群			
		投与終了時剖検群		投与終了時剖検群		回復終了時剖検群	
		動物数	動物番号	動物数	動物番号	動物数	動物番号
媒体対照	0	12	1101-1112	5	5101-5105	5	5106-5110
低用量	5	12	2101-2112				
中用量	15	12	3101-3112				
高用量	50	12	4101-4112	5	6101-6105	5	6106-6110

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5.2 試料

Text-Table 1

ホルモン測定試料（血清）		試験群		動物数	血清試料数 交配群 投与終了時剖検群	血清試料数 交配群 回復終了時剖検群	血清試料数 非交配群 投与終了時剖検群	血清試料数 非交配群 回復終了時剖検群
	測定対象	媒体対照	雄	10	5	5[a)]	—	—
			雌	15	5[a)]	—	5[a)]	5[a)]
		低用量	雄	5	5	—	—	—
			雌	5	5[a)]	—	—	—
		中用量	雄	5	5	—	—	—
			雌	5	5[a)]	—	—	—
		高用量	雄	10	5	5[a)]	—	—
			雌	15	5[a)]	—	5[a)]	5[a)]
		上記に加え、生後 4 日及び 13 日の児動物（交配群の各用量群の母動物から 5 腹ずつ、計 40 腹分）。 a)：本動物及び生後 4 日児動物は、試験責任者の判断により測定しなかった。						
	受領チューブ数	雌雄：3 本、児（生後 4 日）：1 本、児（生後 13 日）：3 本、合計 290 本						
	試験施設での保存条件	−80°C の冷凍庫（許容範囲：−70°C 以下）、実測値：−90.8°C ～ −81.0°C						
	輸送条件	ドライアイス同梱下で輸送された。						
	識別	ラベルに明記された情報（試験番号、採血時期、検査項目、試料番号、採取年月日及び色分け）をもとに、試験場所で血清試料名を割り付けた。						
	試験場所での保存条件	−80°C の冷凍庫（許容範囲：−70°C 以下）、実測値：−79°C ～ −75°C						
	血清試料安定性（−70°C 以下）	保存安定性：16 週間、繰返し凍結融解回数：3 回まで。						
	残余の取扱い	測定後の残余の血清はホルモン濃度測定報告書作成後に試験責任者の指示に基づいて試験場所で廃棄する。						

6. 材料及び方法

受領した試料（Text-Table 1）を用いて下記 6.1 に従い、ホルモン（T4）濃度を測定した。

測定方法及び測定キットに関する情報を下表（Text-Table 2、Text-Table 3）に示す。

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Text-Table 2

ホルモン検査				
検査項目	測定方法	単位	表示桁数	測定範囲
T4	RIA 法	ng/mL	小数点第 1 位	5.7 ~ 340.0 ng/mL
使用測定機器 ガンマカウンター（放射線測定装置 AccuFLEXγ7010、日立アロカメディカル）				

Text-Table 3

T4	
キット	: RIA-gnost®-T4（Cisbio Bioassays）
保存条件	: 2~8°C（実測値：3.8°C~5.5°C）
Lot No.（使用期限）	: 259A（12/31/2019）、260A（1/28/2020）
Calibrator 表示濃度	: 0.0、22.6、49.0、100.0、196.0、340.0 ng/mL（Cal-0、1、2、3、4、5）

6.1 アッセイ方法

6.1.1 T4 測定

6.1.1.1 Cal-1/2 及び Cal-1/4 の調製

Cal-1 と Cal-0 を 1:1（各 60 μL:60 μL）で混合し、Cal-1/2（表示濃度：11.3 ng/mL）とした。さらに、Cal-1/2 と Cal-0 を 1：1（各 30 μL：30 μL）で混合し、Cal-1/4（表示濃度：5.7 ng/mL）とした。調製当日を使用期限とした。

6.1.1.2 測定操作

1) 各試料 20 μL を Ab チューブ（Antibody-coated tube）に加えた（TC を除く）。
2) ^{125}I-T4 tracer（1 mL）をチューブに添加し、ふたをして撹拌した。
3) TC については、tracer をプラスチックチューブ（丸底テストチューブ、WATSON）に加えた。
4) 23°C 設定のインキュベータ内で 45~55 分間（実時間：50 分間）振とうした。
5) チューブ内の溶液をアスピレータで除去した（TC を除く）。
6) ガンマカウンターでチューブの ^{125}I（60 秒間）の放射線計数率（cpm）を測定した。

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6.2 データ解析

Magellan Tracker ver. 7.0 ソフトウェア（Tecan）を用いて、放射線計数率（cpm）から各試料の T4 濃度を算出した。

X 軸を濃度（ng/mL、対数表示）、Y 軸を放射線計数率（cpm）の測定値とし、表示濃度のプロットから検量線を作成した。

解析法、表示桁数を下表に示した。

検査項目	解析法	表示桁数	
		放射線計数率（cpm）	測定濃度
T4	4 パラメーター Marquardt（重み付け：$1/Y^2$）	小数点第 1 位	小数点第 1 位

6.3 測定成立条件の評価

本測定は、以下の測定成立条件を全て満たしていたことから測定成立とした。計算は Microsoft office Excel 2010（Ver.14）で実施（表示桁数で計算）した。

1) TC 及び Cal-0

- TC 及び Cal-0 の平均放射線計数率が Cal-1/4 の平均放射線計数率を超えている。
- 平均放射線計数率は以下の計算式から算出した（小数点第 1 位まで表示）。

$$\text{平均放射線計数率（cpm）} = \frac{\text{個別放射線計数率（cpm）の和}}{2}$$

2) 標準試料

- duplicate での個別放射線計数率の差が 2 倍未満である。
- 測定濃度（個別濃度の平均）の表示濃度に対する真度が Cal-1/4、Cal-5 で 100±25.0%以内、Cal-1/2~-4 のうち 4 試料以上で 100±20.0%以内である。
- 真度（%）は以下の計算式から算出した（小数点第 1 位まで表示）。

$$\text{真度（\%）} = \frac{\text{測定濃度}}{\text{表示濃度}} \times 100$$

3) QC

duplicate での個別放射線計数率の差が 2 倍未満で、かつ測定濃度（個別濃度の平均）が表示濃度範囲内である。

6.4 再測定

前述の測定成立条件（6.3）を満たしていたため、本測定内の測定濃度を採用した。再測定は実施しなかった。

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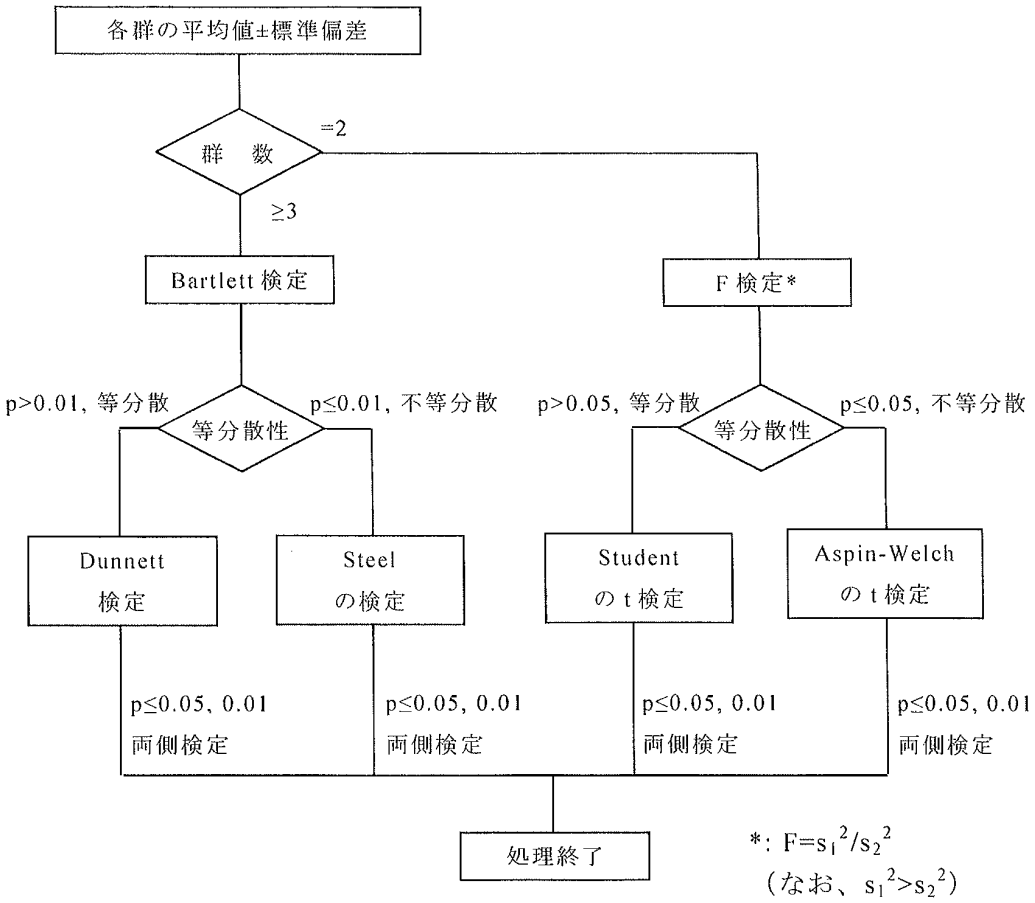
7. 統計解析

検査項目について下記の模式図に示す方法に従って検定した。各群の平均値(Mean)及び標準偏差（SD）の算出には、それぞれ Microsoft Office Excel 2010（Ver.14）SP2 における AVERAGE 関数及び STDEV 関数を用いた。解析には SAS Release 9.1.3 を使用した。



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8. 結果及び考察

8.1 EOA（交配群投与終了時雄動物）

T4 濃度測定の結果を Table 1 に示した。

T4 濃度は媒体対照群と全ての投与群との間に有意差は認められなかった。

8.2 PD13（生後 13 日児動物）

T4 濃度測定の結果を Table 2 に示した。

T4 濃度は媒体対照群と全ての投与群との間に有意差は認められなかった。

9. 結論

「Ethyl ethyldimethyltetradecylammonium sulphate：ラットを用いた経口投与による反復投与毒性・生殖発生毒性併合試験（試験番号：R-1244）」において採取された EOA（交配群投与終了時雄動物）及び PD13（生後 13 日児動物）の血清中のホルモン（T4）濃度を測定した。

その結果、T4 濃度は媒体対照群と全ての投与群との間に有意差は認められなかった。

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Table 1 Hormone concentrations in rat serum of EOA (Male)

Animal No.	T4 (ng/mL)	Animal No.	T4 (ng/mL)	Animal No.	T4 (ng/mL)	Animal No.	T4 (ng/mL)
1001	25.3	2001	30.2	3001	39.8	4001	30.6
1002	35.3	2002	27.6	3002	24.4	4002	36.6
1003	26.8	2003	27.8	3003	28.4	4003	33.4
1004	29.3	2004	29.8	3004	28.7	4004	37.3
1005	28.1	2005	23.5	3005	27.1	4005	38.6
Mean	29.0	Mean	27.8	Mean	29.7	Mean	35.3
SD	3.8	SD	2.7	SD	5.9	SD	3.3
n	5	n	5	n	5	n	5

No significant difference in any treated groups from vehicle control group.

Table 2 Hormone concentrations in rat serum of PD13 (Pups)

Animal No.	T4 (ng/mL)	Animal No.	T4 (ng/mL)	Animal No.	T4 (ng/mL)	Animal No.	T4 (ng/mL)
1101	41.5	2101	43.3	3101	35.8	4103	48.4
1102	30.6	2104	50.7	3106	50.9	4105	54.5
1106	49.7	2110	42.8	3107	35.9	4106	37.5
1109	36.4	2111	30.5	3109	48.9	4108	39.5
1110	46.9	2112	45.7	3111	53.1	4112	58.0
Mean	41.0	Mean	42.6	Mean	44.9	Mean	47.6
SD	7.7	SD	7.5	SD	8.4	SD	9.0
n	5	n	5	n	5	n	5

Animal No.: Dam No. of pups
No significant difference in any treated groups from vehicle control group.

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信頼性保証書(1/2)

ホルモン濃度測定番号：OT-190010

ホルモン濃度測定表題：「Ethyl ethyldimethyltetradecylammonium sulphate：ラットを用いた経口投与による反復投与毒性・生殖発生毒性併合試験（試験番号：R-1244）」におけるホルモン測定

本測定は以下に示す基準に従って実施されたことを保証致します。

- 「新規化学物質等に係る試験を実施する試験施設に関する基準」
（平成 23 年 3 月 31 日：薬食発 0331 第 8 号、平成 23・03・29 製局第 6 号、環保企発第 110331010 号）

なお、調査は下記の通り実施し、報告致しました。

調査項目	調査担当者	調査日	試験主任者及び試験場所管理責任者への報告日	試験責任者、運営管理者及び主信頼性保証部門責任者への報告日
ホルモン濃度測定計画書	[redacted]	2019 年 10 月 4 日 2019 年 10 月 16 日	2019 年 10 月 16 日	2019 年 10 月 16 日
ホルモン濃度測定計画書変更書（1）		2019 年 10 月 16 日	2019 年 10 月 16 日	2019 年 10 月 16 日
試料受領（雄動物）		2019 年 11 月 14 日	2019 年 11 月 14 日	2019 年 11 月 14 日
測定（T4）		2019 年 11 月 18 日	2019 年 11 月 18 日	2019 年 11 月 18 日
試料受領（雌及び児動物）		2019 年 12 月 10 日	2019 年 12 月 10 日	2019 年 12 月 10 日

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信頼性保証書(2/2)

調査項目	調査担当者	調査日	試験主任者及び試験場所管理責任者への報告日	試験責任者、運営管理者及び主信頼性保証部門責任者への報告日
ホルモン濃度測定報告書草案、生データ	[redacted]	2020年1月31日 2020年2月3日 2020年2月4日	2020年2月6日	2020年2月6日
改善確認		2020年2月19日	2020年2月19日	2020年2月20日
ホルモン濃度測定報告書		2020年3月13日	2020年3月16日	2020年3月16日

2020年3月16日
株式会社ボゾリサーチセンター
つくば研究所
試験場所信頼性保証部門責任者 [redacted]

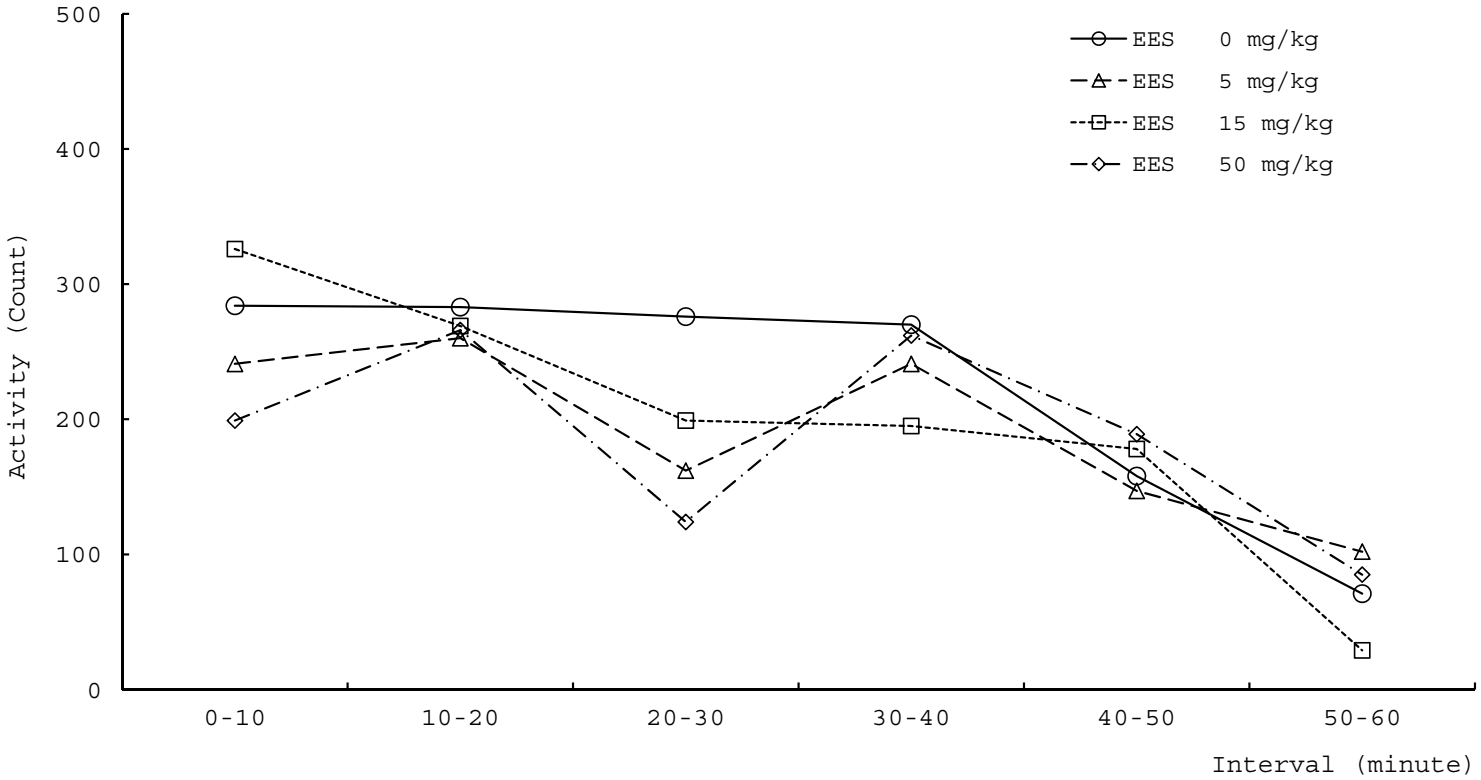

Fig.1 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Motor activity of male rats (Week 6 of administration)

EES: Ethyl ethyldimethyltetradecylammonium sulphate

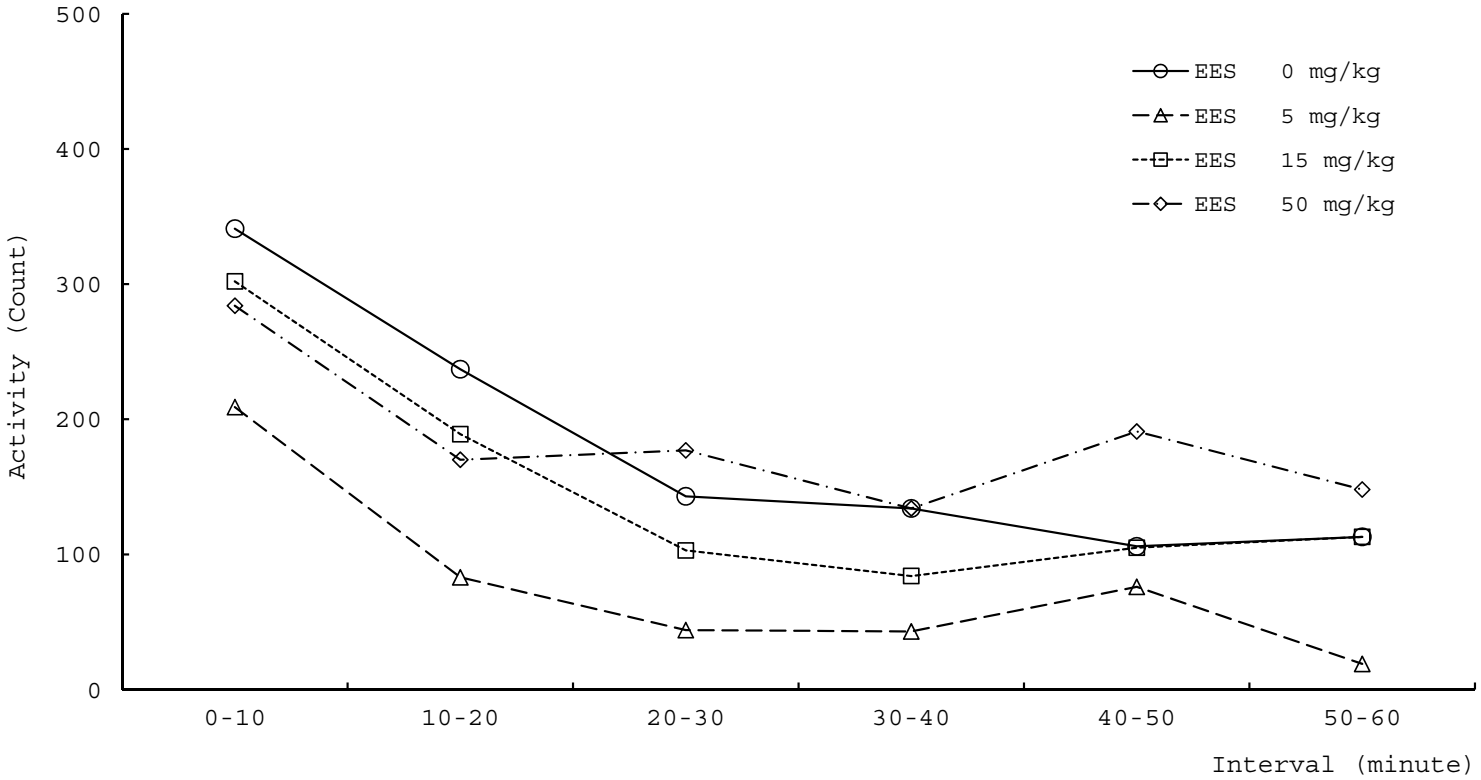

Fig.2 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Motor activity of female rats (Main group, Lactation Day13)

EES: Ethyl ethyldimethyltetradecylammonium sulphate

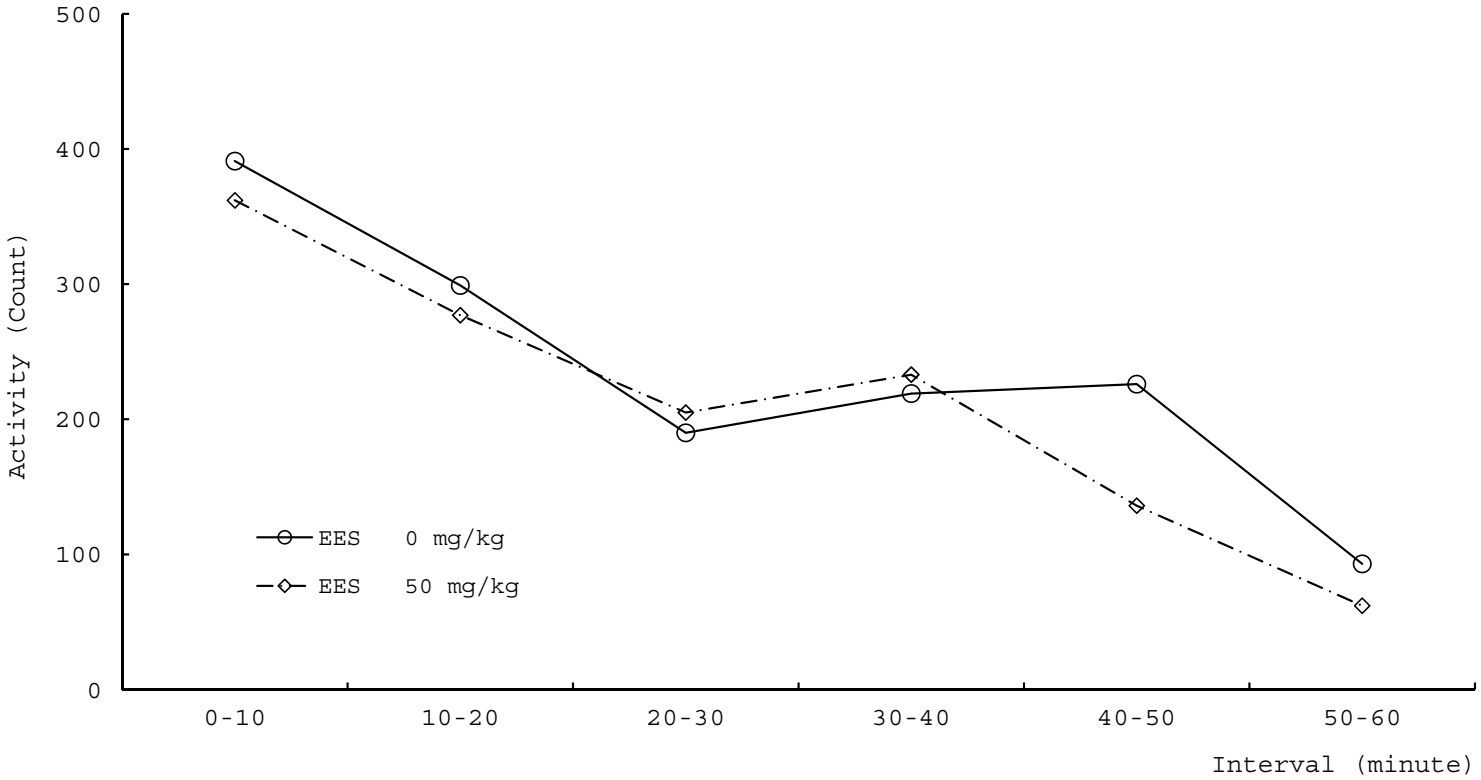

Fig.3 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Motor activity of female rats (Non-mating group, Week 6 of administration)

EES: Ethyl ethyldimethyltetradecylammonium sulphate

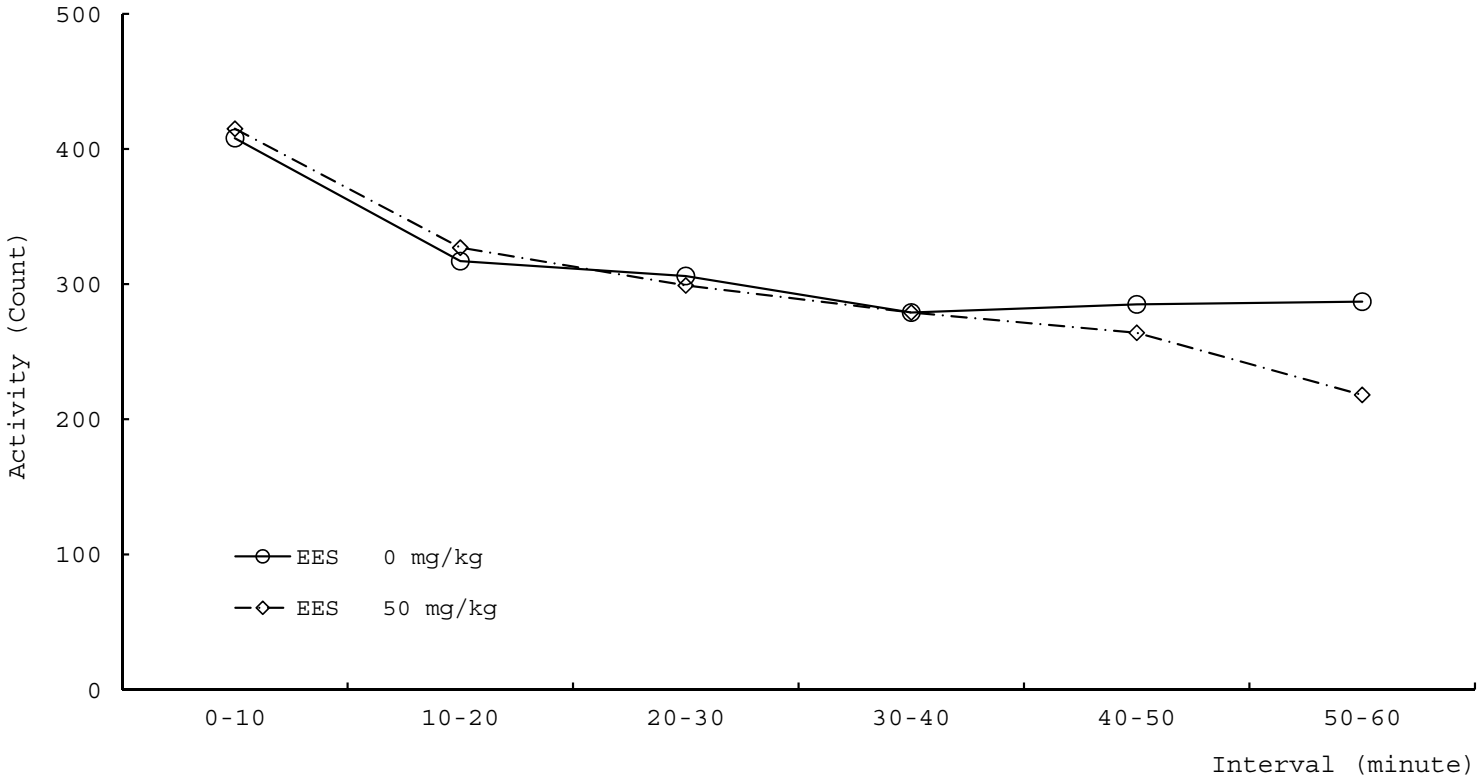

Fig.4 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Motor activity of male rats (Week 2 of recovery)

EES: Ethyl ethyldimethyltetradecylammonium sulphate

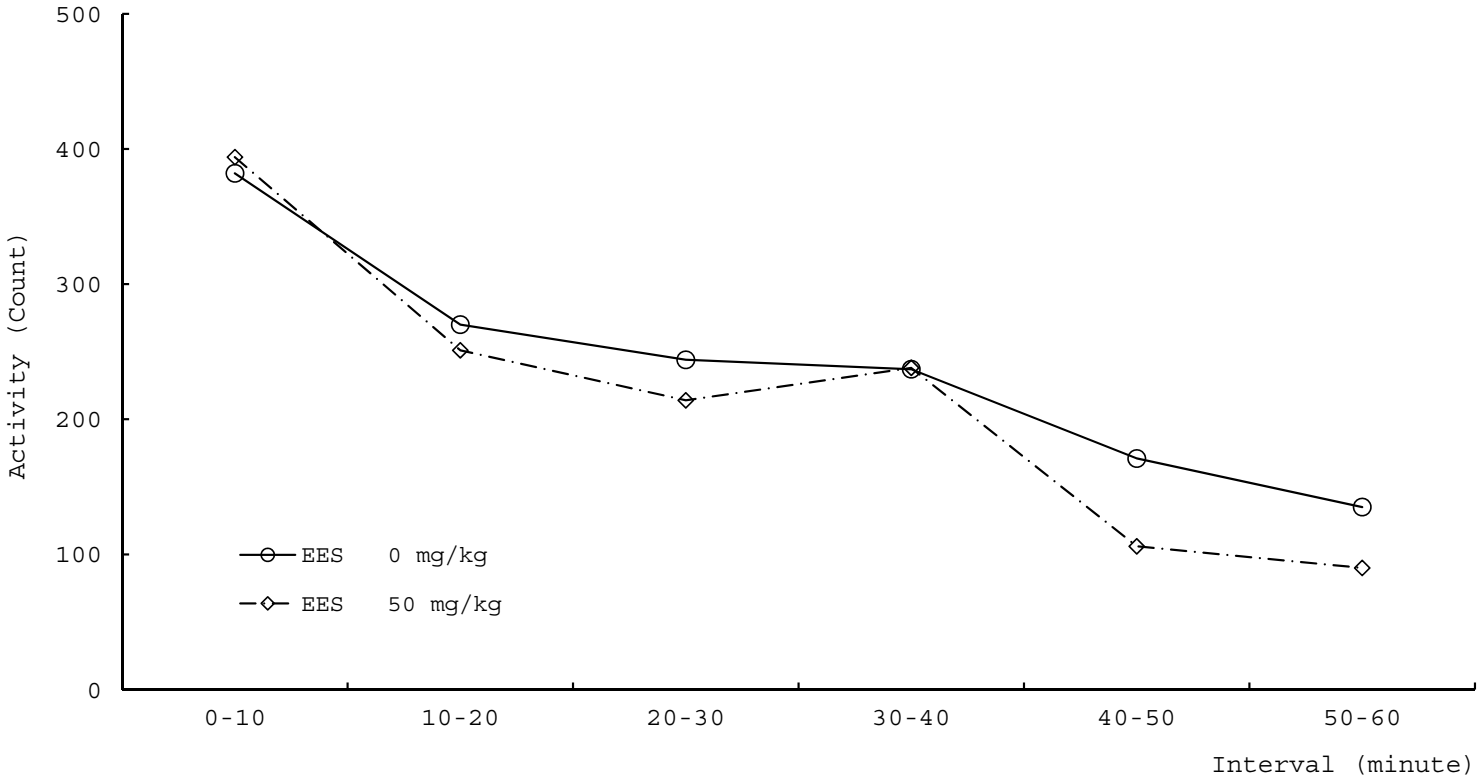

Fig.5 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Motor activity of female rats (Non-mating group, Week 2 of recovery)

EES: Ethyl ethyldimethyltetradecylammonium sulphate

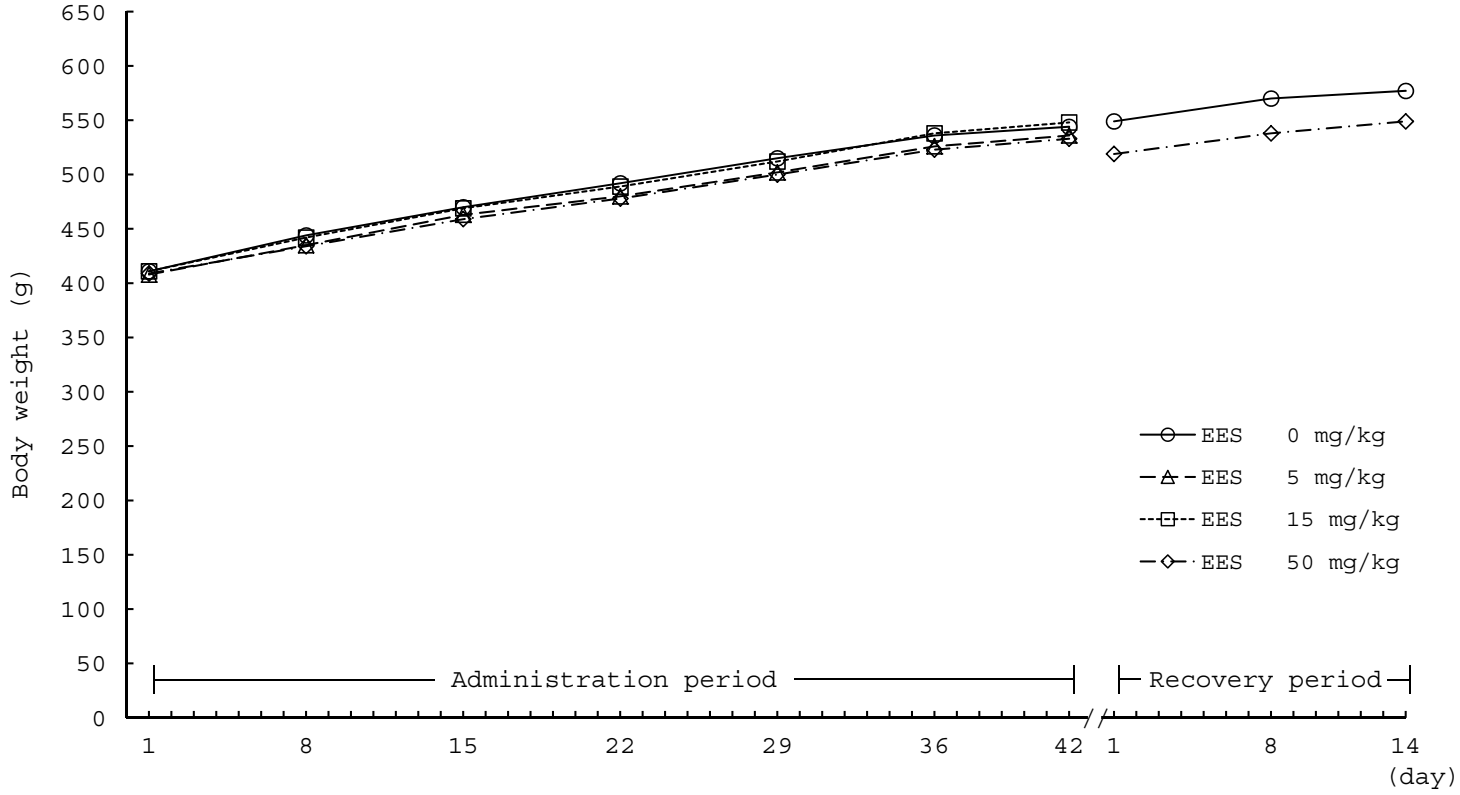

Fig.6 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Body weight of male rats

EES: Ethyl ethyldimethyltetradecylammonium sulphate

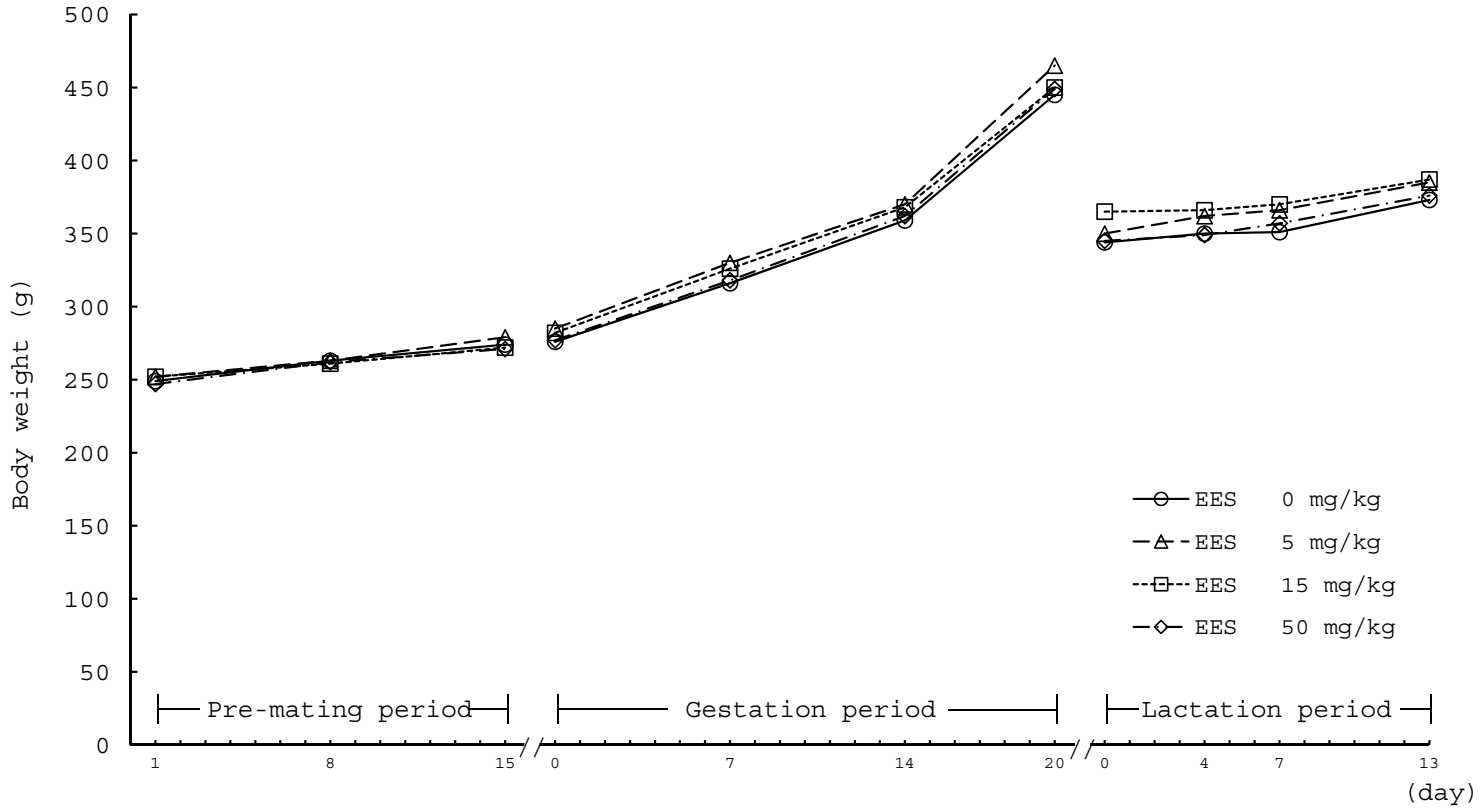

Fig.7 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Body weight of female rats (Main group)

EES: Ethyl ethyldimethyltetradecylammonium sulphate

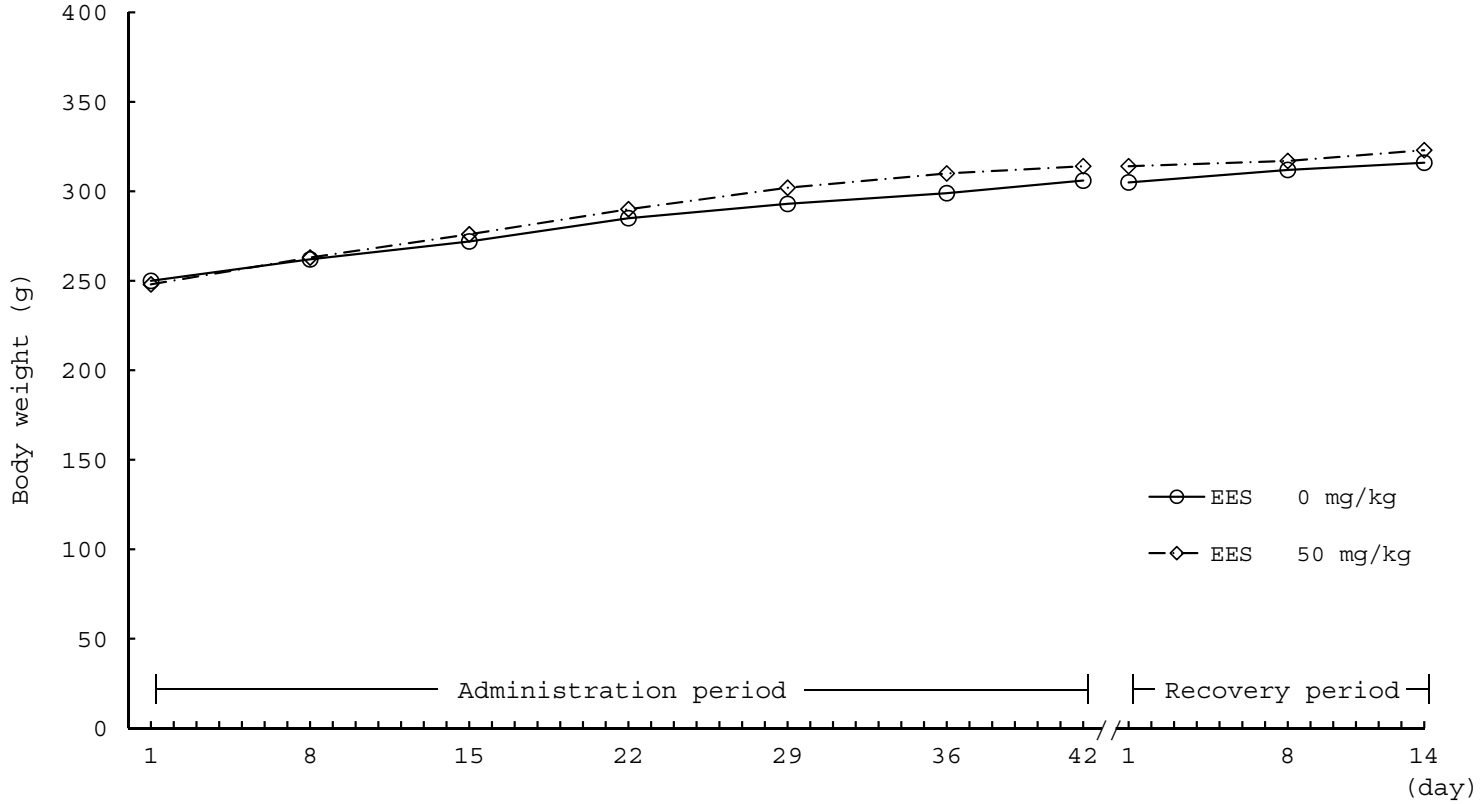

Fig.8 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Body weight of female rats (Non-mating group)

EES: Ethyl ethyldimethyltetradecylammonium sulphate

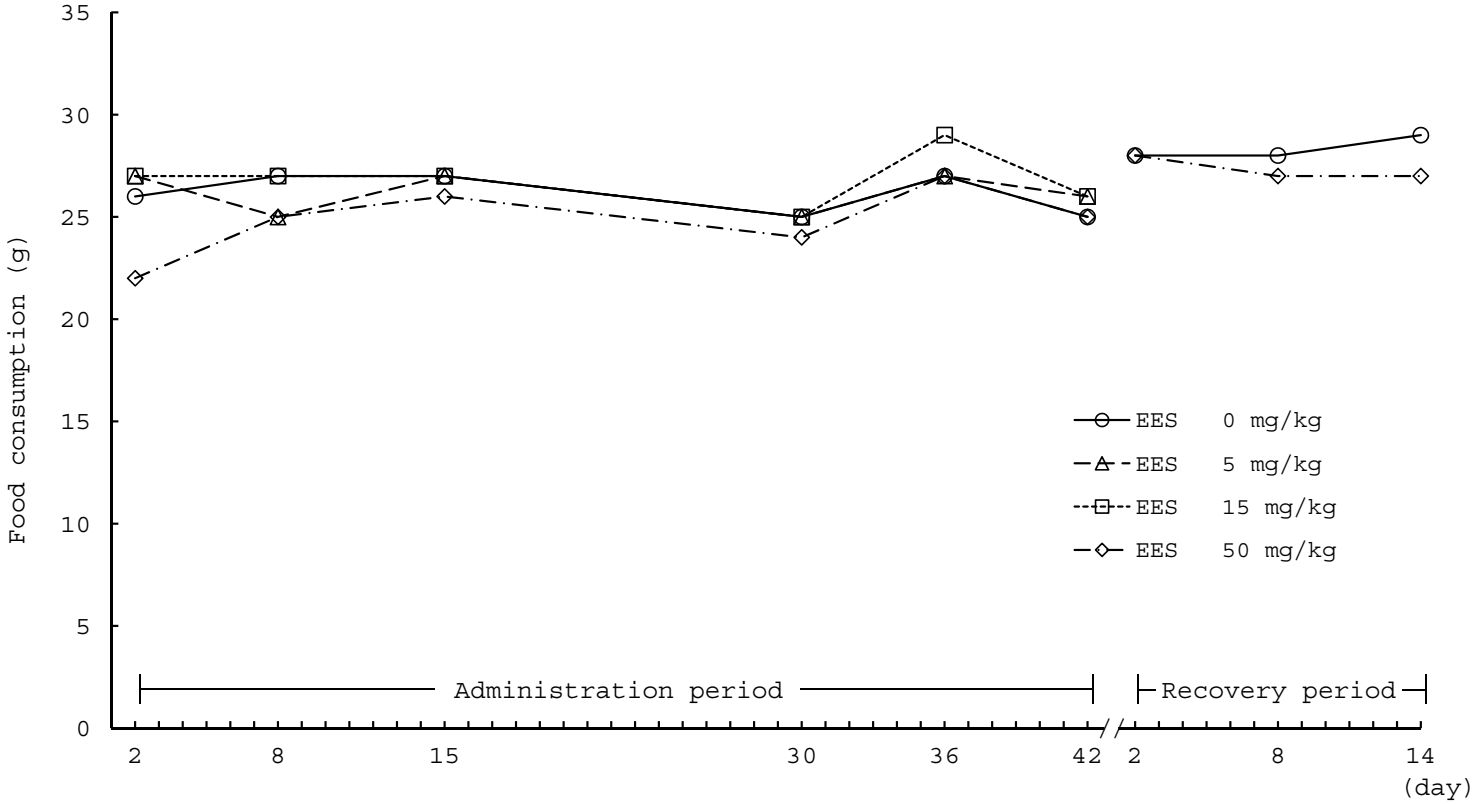

Fig.9 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Food consumption of male rats

EES: Ethyl ethyldimethyltetradecylammonium sulphate

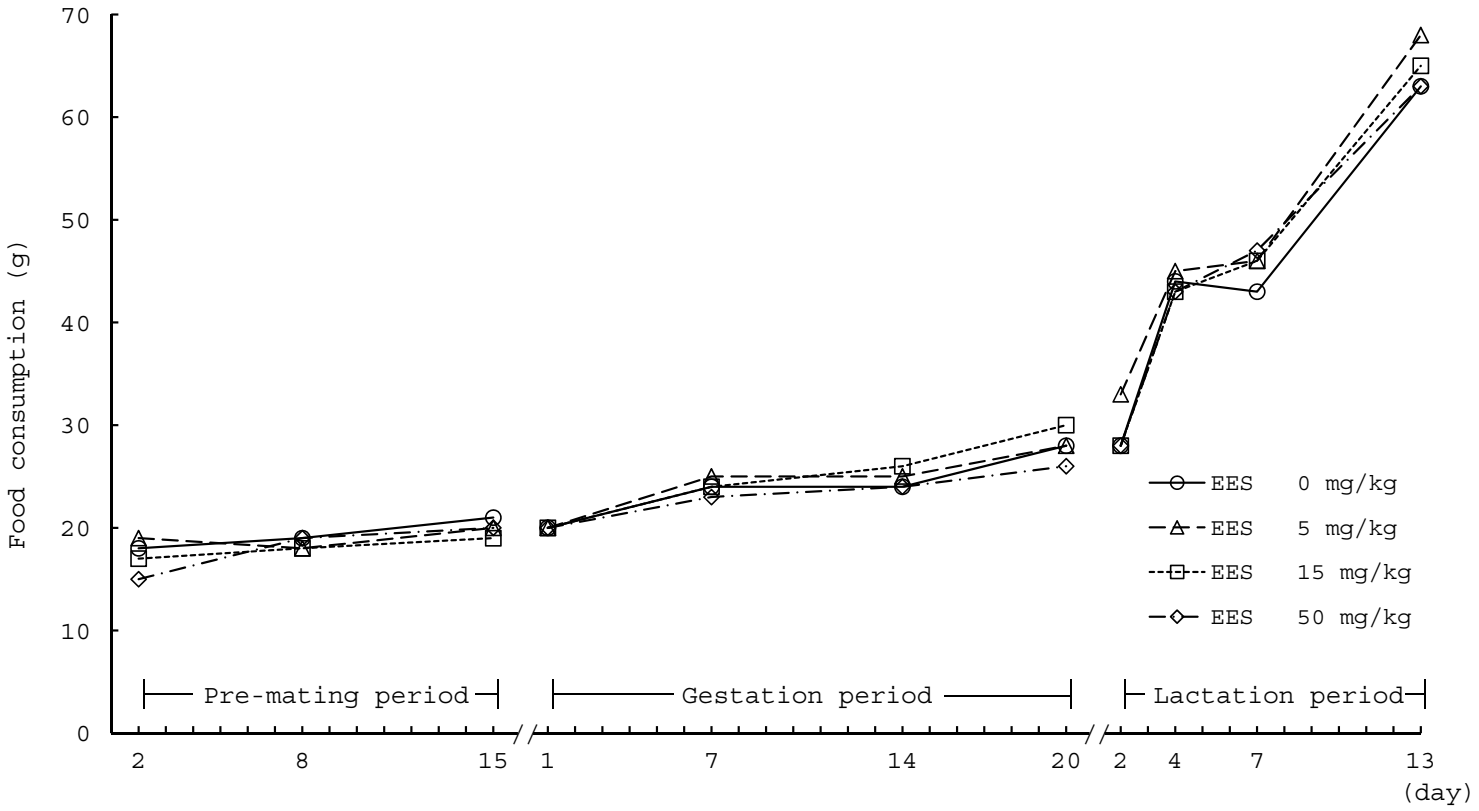

Fig.10 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Food consumption of female rats (Main group)

EES: Ethyl ethyldimethyltetradecylammonium sulphate

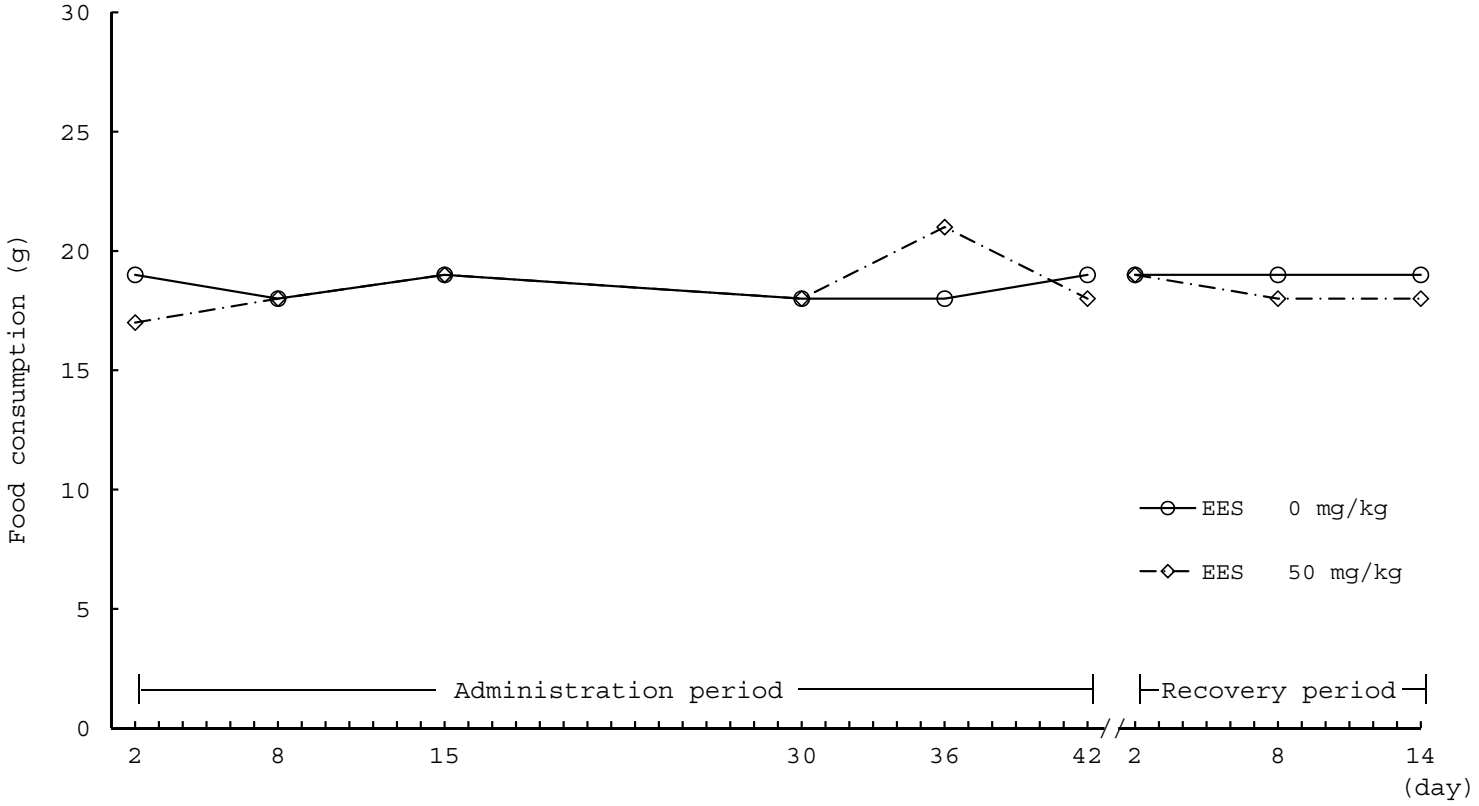

Fig.11 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Food consumption of female rats (Non-mating group)

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 1 - 1 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/ developmental toxicity screening test in rats

Study No. : R-1244

Clinical signs

Period : F0 before mating Day 1-15, F0 mating Day 15-43

Sex : Male

Species : Rat

Test article Dose	Signs	/Day 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
EES	Number of animals	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
0 mg/kg	Number of animals with abnormal findings	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EES	Number of animals	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
5 mg/kg	Number of animals with abnormal findings	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EES	Number of animals	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
15 mg/kg	Number of animals with abnormal findings	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EES	Number of animals	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
50 mg/kg	Number of animals with abnormal findings	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 1 - 2 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/ developmental toxicity screening test in rats

Study No. : R-1244

Clinical signs

Period : F0 before mating Day 1-15, F0 mating Day 15-43

Sex : Male

Species : Rat

Test article Dose	Signs	/Day 22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
EES 0 mg/kg	Number of animals	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
	Number of animals with abnormal findings	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EES 5 mg/kg	Number of animals	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
	Number of animals with abnormal findings	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EES 15 mg/kg	Number of animals	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
	Number of animals with abnormal findings	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EES 50 mg/kg	Number of animals	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
	Number of animals with abnormal findings	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 1 - 3 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/ developmental toxicity screening test in rats

Study No. : R-1244

Clinical signs

Period : F0 before mating Day 1-15, F0 mating Day 15-43

Sex : Male

Species : Rat

Test article Dose	Signs	/Day 43 a)
EES 0 mg/kg	Number of animals	7
	Number of animals with abnormal findings	0
EES 5 mg/kg	Number of animals	12
	Number of animals with abnormal findings	0
EES 15 mg/kg	Number of animals	12
	Number of animals with abnormal findings	0
EES 50 mg/kg	Number of animals	7
	Number of animals with abnormal findings	0

a): Day of necropsy

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 1-4 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/ developmental toxicity screening test in rats

Study No. : R-1244

Clinical signs

Period : F0 before mating Day 1-15

Sex : Female

Species : Rat

Test article Dose	Signs	/Day 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
EES 0 mg/kg	Number of animals	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
	Number of animals with abnormal findings	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EES 5 mg/kg	Number of animals	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
	Number of animals with abnormal findings	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EES 15 mg/kg	Number of animals	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
	Number of animals with abnormal findings	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EES 50 mg/kg	Number of animals	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
	Number of animals with abnormal findings	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 1 - 5 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/ developmental toxicity screening test in rats

Study No. : R-1244

Clinical signs in dams

Period : F0 gestation Day 0-25

Sex : Female

Species : Rat

Test article Dose	Signs	/Day 0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
EES	Number of dams	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	2	0	0	0
0 mg/kg	Number of dams with abnormal findings	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EES	Number of dams	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	4	0	0	0
5 mg/kg	Number of dams with abnormal findings	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EES	Number of dams	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	4	1	1	1
15 mg/kg	Number of dams with abnormal findings	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EES	Number of dams	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	2	0	0	0
50 mg/kg	Number of dams with abnormal findings	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 1 - 6 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/ developmental toxicity screening test in rats

Study No. : R-1244

Clinical signs in dams

Period : F0 lactation Day 0-14

Sex : Female

Species : Rat

Test article Dose	Signs	/Day 0	1	2	3	4	5	6	7	8	9	10	11	12	13	14 a)
EES 0 mg/kg	Number of dams	7	11	11	11	11	11	11	11	11	11	11	11	11	11	11
	Number of dams with abnormal findings	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EES 5 mg/kg	Number of dams	9	12	12	12	12	12	12	12	12	12	12	12	12	12	12
	Number of dams with abnormal findings	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EES 15 mg/kg	Number of dams	4	10	10	10	10	10	10	10	10	10	10	10	10	10	10
	Number of dams with abnormal findings	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EES 50 mg/kg	Number of dams	9	11	11	11	11	11	11	11	11	11	11	11	11	11	11
	Number of dams with abnormal findings	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

a): Day of necropsy

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 1-7 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/ developmental toxicity screening test in rats

Study No. : R-1244

Clinical signs

Period : Administration Day 1-43 (non-mating group)

Sex : Female

Species : Rat

Test article Dose	Signs	/Day 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
EES 0 mg/kg	Number of animals	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
	Number of animals with abnormal findings	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EES 50 mg/kg	Number of animals	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
	Number of animals with abnormal findings	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 1-8 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/ developmental toxicity screening test in rats Study No. : R-1244

Clinical signs Period : Administration Day 1-43 (non-mating group)

Sex : Female Species : Rat

Test article Dose	Signs	/Day 22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
EES 0 mg/kg	Number of animals	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
	Number of animals with abnormal findings	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EES 50 mg/kg	Number of animals	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
	Number of animals with abnormal findings	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 1-9 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/ developmental toxicity screening test in rats

Study No. : R-1244

Clinical signs

Period : Administration Day 1-43 (non-mating group)

Sex : Female

Species : Rat

Test article Dose	Signs	/Day 43 a)
EES 0 mg/kg	Number of animals	5
	Number of animals with abnormal findings	0
EES 50 mg/kg	Number of animals	5
	Number of animals with abnormal findings	0

a): Day of necropsy

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 1-10 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/ developmental toxicity screening test in rats

Study No. : R-1244

Clinical signs

Period : Recovery Day 1-15

Sex : Male

Species : Rat

Test article Dose	Signs	/Day 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15 a)
EES 0 mg/kg	Number of animals	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	Number of animals with abnormal findings	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EES 50 mg/kg	Number of animals	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	Number of animals with abnormal findings	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

a): Day of necropsy

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 1-11 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/ developmental toxicity screening test in rats

Study No. : R-1244

Clinical signs

Period : Recovery Day 1-15

Sex : Female

Species : Rat

Test article Dose	Signs	/Day 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15 a)
EES 0 mg/kg	Number of animals	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	Number of animals with abnormal findings	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EES 50 mg/kg	Number of animals	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	Number of animals with abnormal findings	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

a): Day of necropsy

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 1 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Home cage observation Period : F0 before mating

Generation : F0 Sex : Male Week : 1 Species : Rat

Test article Dose		Posture NC N	F	H	Convulsion NC 0	1	2	3
EES 0 mg/kg	n	12	0	0	12	0	0	0
EES 5 mg/kg	n	12	0	0	12	0	0	0
EES 15 mg/kg	n	12	0	0	12	0	0	0
EES 50 mg/kg	n	12	0	0	12	0	0	0

Test article Dose		Abnormal NC behavior 0	1	2	3
EES 0 mg/kg	n	12	0	0	0
EES 5 mg/kg	n	12	0	0	0
EES 15 mg/kg	n	12	0	0	0
EES 50 mg/kg	n	12	0	0	0

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 2 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Home cage observation Period : F0 before mating

Generation : F0 Sex : Male Week : 2 Species : Rat

Test article Dose		Posture NC N	F	H	Convulsion NC 0	1	2	3
EES 0 mg/kg	n	12	0	0	12	0	0	0
EES 5 mg/kg	n	12	0	0	12	0	0	0
EES 15 mg/kg	n	12	0	0	12	0	0	0
EES 50 mg/kg	n	12	0	0	12	0	0	0

Test article Dose		Abnormal NC behavior 0	1	2	3
EES 0 mg/kg	n	12	0	0	0
EES 5 mg/kg	n	12	0	0	0
EES 15 mg/kg	n	12	0	0	0
EES 50 mg/kg	n	12	0	0	0

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 3 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Home cage observation Period : F0 mating

Generation : F0 Sex : Male Week : 3 Species : Rat

Test article Dose		Posture NC N	F	H	Convulsion NC 0	1	2	3
EES 0 mg/kg	n	12	0	0	12	0	0	0
EES 5 mg/kg	n	12	0	0	12	0	0	0
EES 15 mg/kg	n	12	0	0	12	0	0	0
EES 50 mg/kg	n	12	0	0	12	0	0	0

Test article Dose		Abnormal NC behavior 0	1	2	3
EES 0 mg/kg	n	12	0	0	0
EES 5 mg/kg	n	12	0	0	0
EES 15 mg/kg	n	12	0	0	0
EES 50 mg/kg	n	12	0	0	0

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 4 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Home cage observation Period : F0 mating

Generation : F0 Sex : Male Week : 4 Species : Rat

Test article Dose		Posture NC			Convulsion NC			
		N	F	H	0	1	2	3
EES 0 mg/kg	n	12	0	0	12	0	0	0
EES 5 mg/kg	n	12	0	0	12	0	0	0
EES 15 mg/kg	n	12	0	0	12	0	0	0
EES 50 mg/kg	n	12	0	0	12	0	0	0

Test article Dose		Abnormal NC behavior			
		0	1	2	3
EES 0 mg/kg	n	12	0	0	0
EES 5 mg/kg	n	12	0	0	0
EES 15 mg/kg	n	12	0	0	0
EES 50 mg/kg	n	12	0	0	0

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 5 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Home cage observation Period : F0 mating

Generation : F0 Sex : Male Week : 5 Species : Rat

Test article Dose		Posture NC N	 F	 H	Convulsion NC 0	 1	 2	 3
EES 0 mg/kg	n	12	0	0	12	0	0	0
EES 5 mg/kg	n	12	0	0	12	0	0	0
EES 15 mg/kg	n	12	0	0	12	0	0	0
EES 50 mg/kg	n	12	0	0	12	0	0	0

Test article Dose		Abnormal NC behavior 0	 1	 2	 3
EES 0 mg/kg	n	12	0	0	0
EES 5 mg/kg	n	12	0	0	0
EES 15 mg/kg	n	12	0	0	0
EES 50 mg/kg	n	12	0	0	0

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 6 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Home cage observation Period : F0 mating

Generation : F0 Sex : Male Week : 6 Species : Rat

Test article Dose		Posture NC N	F	H	Convulsion NC 0	1	2	3
EES 0 mg/kg	n	12	0	0	12	0	0	0
EES 5 mg/kg	n	12	0	0	12	0	0	0
EES 15 mg/kg	n	12	0	0	12	0	0	0
EES 50 mg/kg	n	12	0	0	12	0	0	0

Test article Dose		Abnormal NC behavior 0	1	2	3
EES 0 mg/kg	n	12	0	0	0
EES 5 mg/kg	n	12	0	0	0
EES 15 mg/kg	n	12	0	0	0
EES 50 mg/kg	n	12	0	0	0

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 7 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Home cage observation Period : F0 before mating

Generation : F0 Sex : Female Week : 1 Species : Rat

Test article Dose		Posture NC			Convulsion NC			
		N	F	H	0	1	2	3
EES 0 mg/kg	n	12	0	0	12	0	0	0
EES 5 mg/kg	n	12	0	0	12	0	0	0
EES 15 mg/kg	n	12	0	0	12	0	0	0
EES 50 mg/kg	n	12	0	0	12	0	0	0

Test article Dose		Abnormal NC behavior			
		0	1	2	3
EES 0 mg/kg	n	12	0	0	0
EES 5 mg/kg	n	12	0	0	0
EES 15 mg/kg	n	12	0	0	0
EES 50 mg/kg	n	12	0	0	0

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 8 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Home cage observation Period : F0 before mating

Generation : F0 Sex : Female Week : 2 Species : Rat

Test article Dose		Posture NC N	F	H	Convulsion NC 0	1	2	3
EES 0 mg/kg	n	12	0	0	12	0	0	0
EES 5 mg/kg	n	12	0	0	12	0	0	0
EES 15 mg/kg	n	12	0	0	12	0	0	0
EES 50 mg/kg	n	12	0	0	12	0	0	0

Test article Dose		Abnormal NC behavior 0	1	2	3
EES 0 mg/kg	n	12	0	0	0
EES 5 mg/kg	n	12	0	0	0
EES 15 mg/kg	n	12	0	0	0
EES 50 mg/kg	n	12	0	0	0

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 9 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Home cage observation Period : F0 gestation

Generation : F0 Sex : Female Day : 1 Species : Rat

Test article Dose		Posture NC			Convulsion NC			
		N	F	H	0	1	2	3
EES 0 mg/kg	n	11	0	0	11	0	0	0
EES 5 mg/kg	n	12	0	0	12	0	0	0
EES 15 mg/kg	n	11	0	0	11	0	0	0
EES 50 mg/kg	n	11	0	0	11	0	0	0

Test article Dose		Abnormal NC behavior			
		0	1	2	3
EES 0 mg/kg	n	11	0	0	0
EES 5 mg/kg	n	12	0	0	0
EES 15 mg/kg	n	11	0	0	0
EES 50 mg/kg	n	11	0	0	0

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 10 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Home cage observation Period : F0 gestation

Generation : F0 Sex : Female Day : 7 Species : Rat

Test article Dose		Posture NC N	F	H	Convulsion NC 0	1	2	3
EES 0 mg/kg	n	11	0	0	11	0	0	0
EES 5 mg/kg	n	12	0	0	12	0	0	0
EES 15 mg/kg	n	11	0	0	11	0	0	0
EES 50 mg/kg	n	11	0	0	11	0	0	0

Test article Dose		Abnormal NC behavior 0	1	2	3
EES 0 mg/kg	n	11	0	0	0
EES 5 mg/kg	n	12	0	0	0
EES 15 mg/kg	n	11	0	0	0
EES 50 mg/kg	n	11	0	0	0

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 11 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Home cage observation Period : F0 gestation

Generation : F0 Sex : Female Day : 14 Species : Rat

Test article Dose		Posture NC			Convulsion NC			
		N	F	H	0	1	2	3
EES 0 mg/kg	n	11	0	0	11	0	0	0
EES 5 mg/kg	n	12	0	0	12	0	0	0
EES 15 mg/kg	n	11	0	0	11	0	0	0
EES 50 mg/kg	n	11	0	0	11	0	0	0

Test article Dose		Abnormal NC behavior			
		0	1	2	3
EES 0 mg/kg	n	11	0	0	0
EES 5 mg/kg	n	12	0	0	0
EES 15 mg/kg	n	11	0	0	0
EES 50 mg/kg	n	11	0	0	0

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 12 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Home cage observation Period : F0 gestation

Generation : F0 Sex : Female Day : 20 Species : Rat

Test article Dose		Posture NC			Convulsion NC			
		N	F	H	0	1	2	3
EES 0 mg/kg	n	11	0	0	11	0	0	0
EES 5 mg/kg	n	12	0	0	12	0	0	0
EES 15 mg/kg	n	11	0	0	11	0	0	0
EES 50 mg/kg	n	11	0	0	11	0	0	0

Test article Dose		Abnormal NC behavior			
		0	1	2	3
EES 0 mg/kg	n	11	0	0	0
EES 5 mg/kg	n	12	0	0	0
EES 15 mg/kg	n	11	0	0	0
EES 50 mg/kg	n	11	0	0	0

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 13 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Home cage observation Period : F0 lactation

Generation : F0 Sex : Female Day : 6 Species : Rat

Test article Dose		Posture NC			Convulsion NC			
		N	F	H	0	1	2	3
EES 0 mg/kg	n	11	0	0	11	0	0	0
EES 5 mg/kg	n	12	0	0	12	0	0	0
EES 15 mg/kg	n	10	0	0	10	0	0	0
EES 50 mg/kg	n	11	0	0	11	0	0	0

Test article Dose		Abnormal NC behavior			
		0	1	2	3
EES 0 mg/kg	n	11	0	0	0
EES 5 mg/kg	n	12	0	0	0
EES 15 mg/kg	n	10	0	0	0
EES 50 mg/kg	n	11	0	0	0

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 14 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Home cage observation Period : F0 lactation

Generation : F0 Sex : Female Day : 13 Species : Rat

Test article Dose		Posture NC N	F	H	Convulsion NC 0	1	2	3
EES 0 mg/kg	n	11	0	0	11	0	0	0
EES 5 mg/kg	n	12	0	0	12	0	0	0
EES 15 mg/kg	n	10	0	0	10	0	0	0
EES 50 mg/kg	n	11	0	0	11	0	0	0

Test article Dose		Abnormal NC behavior 0	1	2	3
EES 0 mg/kg	n	11	0	0	0
EES 5 mg/kg	n	12	0	0	0
EES 15 mg/kg	n	10	0	0	0
EES 50 mg/kg	n	11	0	0	0

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 15 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Home cage observation Period : Administration (non-mating group)

Generation : F0 Sex : Female Week : 1 Species : Rat

Test article Dose		Posture NC N	F	H	Convulsion NC 0	1	2	3
EES 0 mg/kg	n	10	0	0	10	0	0	0
EES 50 mg/kg	n	10	0	0	10	0	0	0

Test article Dose		Abnormal NC behavior 0	1	2	3
EES 0 mg/kg	n	10	0	0	0
EES 50 mg/kg	n	10	0	0	0

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 16 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Home cage observation Period : Administration (non-mating group)

Generation : F0 Sex : Female Week : 2 Species : Rat

Test article Dose		Posture NC N	F	H	Convulsion NC 0	1	2	3
EES 0 mg/kg	n	10	0	0	10	0	0	0
EES 50 mg/kg	n	10	0	0	10	0	0	0

Test article Dose		Abnormal NC behavior 0	1	2	3
EES 0 mg/kg	n	10	0	0	0
EES 50 mg/kg	n	10	0	0	0

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 17 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Home cage observation Period : Administration (non-mating group)

Generation : F0 Sex : Female Week : 3 Species : Rat

Test article Dose		Posture NC N	F	H	Convulsion NC 0	1	2	3
EES 0 mg/kg	n	10	0	0	10	0	0	0
EES 50 mg/kg	n	10	0	0	10	0	0	0

Test article Dose		Abnormal NC behavior 0	1	2	3
EES 0 mg/kg	n	10	0	0	0
EES 50 mg/kg	n	10	0	0	0

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 18 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Home cage observation Period : Administration (non-mating group)

Generation : F0 Sex : Female Week : 4 Species : Rat

Test article Dose		Posture NC N	F	H	Convulsion NC 0	1	2	3
EES 0 mg/kg	n	10	0	0	10	0	0	0
EES 50 mg/kg	n	10	0	0	10	0	0	0

Test article Dose		Abnormal NC behavior 0	1	2	3
EES 0 mg/kg	n	10	0	0	0
EES 50 mg/kg	n	10	0	0	0

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 19 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Home cage observation Period : Administration (non-mating group)

Generation : F0 Sex : Female Week : 5 Species : Rat

Test article Dose		Posture NC N	F	H	Convulsion NC 0	1	2	3
EES 0 mg/kg	n	10	0	0	10	0	0	0
EES 50 mg/kg	n	10	0	0	10	0	0	0

Test article Dose		Abnormal NC behavior 0	1	2	3
EES 0 mg/kg	n	10	0	0	0
EES 50 mg/kg	n	10	0	0	0

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 20 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Home cage observation Period : Administration (non-mating group)

Generation : F0 Sex : Female Week : 6 Species : Rat

Test article Dose		Posture NC N	F	H	Convulsion NC 0	1	2	3
EES 0 mg/kg	n	10	0	0	10	0	0	0
EES 50 mg/kg	n	10	0	0	10	0	0	0

Test article Dose		Abnormal NC behavior 0	1	2	3
EES 0 mg/kg	n	10	0	0	0
EES 50 mg/kg	n	10	0	0	0

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 21 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Home cage observation Period : Recovery

Generation : F0 Sex : Male Week : 1 Species : Rat

Test article Dose		Posture NC N	F	H	Convulsion NC 0	1	2	3
EES 0 mg/kg	n	5	0	0	5	0	0	0
EES 50 mg/kg	n	5	0	0	5	0	0	0

Test article Dose		Abnormal NC behavior 0	1	2	3
EES 0 mg/kg	n	5	0	0	0
EES 50 mg/kg	n	5	0	0	0

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 22 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Home cage observation Period : Recovery

Generation : F0 Sex : Male Week : 2 Species : Rat

Test article Dose		Posture NC			Convulsion NC			
		N	F	H	0	1	2	3
EES 0 mg/kg	n	5	0	0	5	0	0	0
EES 50 mg/kg	n	5	0	0	5	0	0	0

Test article Dose		Abnormal NC behavior			
		0	1	2	3
EES 0 mg/kg	n	5	0	0	0
EES 50 mg/kg	n	5	0	0	0

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 23 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Home cage observation Period : Recovery(non-mating group)

Generation : F0 Sex : Female Week : 1 Species : Rat

Test article Dose		Posture NC N	F	H	Convulsion NC 0	1	2	3
EES 0 mg/kg	n	5	0	0	5	0	0	0
EES 50 mg/kg	n	5	0	0	5	0	0	0

Test article Dose		Abnormal NC behavior 0	1	2	3
EES 0 mg/kg	n	5	0	0	0
EES 50 mg/kg	n	5	0	0	0

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 24 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Home cage observation Period : Recovery(non-mating group)

Generation : F0 Sex : Female Week : 2 Species : Rat

Test article Dose		Posture NC N	F	H	Convulsion NC 0	1	2	3
EES 0 mg/kg	n	5	0	0	5	0	0	0
EES 50 mg/kg	n	5	0	0	5	0	0	0

Test article Dose		Abnormal NC behavior 0	1	2	3
EES 0 mg/kg	n	5	0	0	0
EES 50 mg/kg	n	5	0	0	0

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 25 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

In-the-hand observation Period : F0 before mating

Generation : F0 Sex : Male Week : 1 Species : Rat

Test article / Dose		Ease of removal from cage NC					Fur condition NC			
		-1	0	1	2	3	0	1	2	3
EES 0 mg/kg	n	0	12	0	0	0	12	0	0	0
EES 5 mg/kg	n	0	12	0	0	0	12	0	0	0
EES 15 mg/kg	n	0	12	0	0	0	12	0	0	0
EES 50 mg/kg	n	0	12	0	0	0	12	0	0	0

Test article / Dose		Skin NC				Secretions- NC Eye, Nose		Exophthalmos NC	
		0	1	2	3	0	1	0	1
EES 0 mg/kg	n	12	0	0	0	12	0	12	0
EES 5 mg/kg	n	12	0	0	0	12	0	12	0
EES 15 mg/kg	n	12	0	0	0	12	0	12	0
EES 50 mg/kg	n	12	0	0	0	12	0	12	0

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 26 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

In-the-hand observation Period : F0 before mating

Generation : F0 Sex : Male Week : 1 Species : Rat

Test article / Dose		Palpebral NC closure				Mucosal NC membranes				Lacrimation NC	
		0	1	2	3	0	1	2	3	0	1
EES 0 mg/kg	n	12	0	0	0	12	0	0	0	12	0
EES 5 mg/kg	n	12	0	0	0	12	0	0	0	12	0
EES 15 mg/kg	n	12	0	0	0	12	0	0	0	12	0
EES 50 mg/kg	n	12	0	0	0	12	0	0	0	12	0

Test article / Dose		Piloerection NC		Pupil size NC				Salivation NC			
		0	1	-1	0	1	2	0	1	2	3
EES 0 mg/kg	n	12	0	0	12	0	0	12	0	0	0
EES 5 mg/kg	n	12	0	0	12	0	0	12	0	0	0
EES 15 mg/kg	n	12	0	0	12	0	0	12	0	0	0
EES 50 mg/kg	n	12	0	0	12	0	0	12	0	0	0

Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 27 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

In-the-hand observation Period : F0 before mating

Generation : F0 Sex : Male Week : 1 Species : Rat

Test article Dose		Abnormal NC respiration 0	1	2	3	Vocalization NC 0	1	2	3
EES 0 mg/kg	n	12	0	0	0	12	0	0	0
EES 5 mg/kg	n	12	0	0	0	12	0	0	0
EES 15 mg/kg	n	12	0	0	0	12	0	0	0
EES 50 mg/kg	n	12	0	0	0	12	0	0	0

Test article Dose		Reactivity to NC handling -1	0	1	2	3
EES 0 mg/kg	n	0	12	0	0	0
EES 5 mg/kg	n	0	12	0	0	0
EES 15 mg/kg	n	0	12	0	0	0
EES 50 mg/kg	n	0	12	0	0	0

Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 28 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

In-the-hand observation Period : F0 before mating

Generation : F0 Sex : Male Week : 2 Species : Rat

Test article / Dose		Ease of removal from cage NC					Fur condition NC			
		-1	0	1	2	3	0	1	2	3
EES 0 mg/kg	n	0	12	0	0	0	12	0	0	0
EES 5 mg/kg	n	0	12	0	0	0	12	0	0	0
EES 15 mg/kg	n	0	12	0	0	0	12	0	0	0
EES 50 mg/kg	n	0	12	0	0	0	12	0	0	0

Test article / Dose		Skin NC				Secretions-Eye, Nose NC		Exophthalmos NC	
		0	1	2	3	0	1	0	1
EES 0 mg/kg	n	12	0	0	0	12	0	12	0
EES 5 mg/kg	n	12	0	0	0	12	0	12	0
EES 15 mg/kg	n	12	0	0	0	12	0	12	0
EES 50 mg/kg	n	12	0	0	0	12	0	12	0

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 29 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

In-the-hand observation Period : F0 before mating

Generation : F0 Sex : Male Week : 2 Species : Rat

Test article		Palpebral NC closure				Mucosal NC membranes				Lacrimation NC	
Dose		0	1	2	3	0	1	2	3	0	1
EES 0 mg/kg	n	12	0	0	0	12	0	0	0	12	0
EES 5 mg/kg	n	12	0	0	0	12	0	0	0	12	0
EES 15 mg/kg	n	12	0	0	0	12	0	0	0	12	0
EES 50 mg/kg	n	12	0	0	0	12	0	0	0	12	0

Test article		Piloerection NC		Pupil size NC				Salivation NC			
Dose		0	1	-1	0	1	2	0	1	2	3
EES 0 mg/kg	n	12	0	0	12	0	0	12	0	0	0
EES 5 mg/kg	n	12	0	0	12	0	0	12	0	0	0
EES 15 mg/kg	n	12	0	0	12	0	0	12	0	0	0
EES 50 mg/kg	n	12	0	0	12	0	0	12	0	0	0

Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 30 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

In-the-hand observation Period : F0 before mating

Generation : F0 Sex : Male Week : 2 Species : Rat

Test article		Abnormal NC respiration				Vocalization NC			
Dose		0	1	2	3	0	1	2	3
EES 0 mg/kg	n	12	0	0	0	12	0	0	0
EES 5 mg/kg	n	12	0	0	0	12	0	0	0
EES 15 mg/kg	n	12	0	0	0	12	0	0	0
EES 50 mg/kg	n	12	0	0	0	12	0	0	0

Test article		Reactivity to NC handling				
Dose		-1	0	1	2	3
EES 0 mg/kg	n	0	12	0	0	0
EES 5 mg/kg	n	0	12	0	0	0
EES 15 mg/kg	n	0	12	0	0	0
EES 50 mg/kg	n	0	12	0	0	0

Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 31 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

In-the-hand observation Period : F0 mating

Generation : F0 Sex : Male Week : 3 Species : Rat

Test article / Dose		Ease of removal from cage NC					Fur condition NC			
		-1	0	1	2	3	0	1	2	3
EES 0 mg/kg	n	0	12	0	0	0	12	0	0	0
EES 5 mg/kg	n	0	12	0	0	0	12	0	0	0
EES 15 mg/kg	n	0	12	0	0	0	12	0	0	0
EES 50 mg/kg	n	0	12	0	0	0	12	0	0	0

Test article / Dose		Skin NC				Secretions-Eye, Nose NC		Exophthalmos NC	
		0	1	2	3	0	1	0	1
EES 0 mg/kg	n	12	0	0	0	12	0	12	0
EES 5 mg/kg	n	12	0	0	0	12	0	12	0
EES 15 mg/kg	n	12	0	0	0	12	0	12	0
EES 50 mg/kg	n	12	0	0	0	12	0	12	0

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 32 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

In-the-hand observation Period : F0 mating

Generation : F0 Sex : Male Week : 3 Species : Rat

Test article		Palpebral NC closure				Mucosal NC membranes				Lacrimation NC	
Dose		0	1	2	3	0	1	2	3	0	1
EES 0 mg/kg	n	12	0	0	0	12	0	0	0	12	0
EES 5 mg/kg	n	12	0	0	0	12	0	0	0	12	0
EES 15 mg/kg	n	12	0	0	0	12	0	0	0	12	0
EES 50 mg/kg	n	12	0	0	0	12	0	0	0	12	0

Test article		Piloerection NC		Pupil size NC				Salivation NC			
Dose		0	1	-1	0	1	2	0	1	2	3
EES 0 mg/kg	n	12	0	0	12	0	0	12	0	0	0
EES 5 mg/kg	n	12	0	0	12	0	0	12	0	0	0
EES 15 mg/kg	n	12	0	0	12	0	0	12	0	0	0
EES 50 mg/kg	n	12	0	0	12	0	0	12	0	0	0

Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 33 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

In-the-hand observation Period : F0 mating

Generation : F0 Sex : Male Week : 3 Species : Rat

Test article Dose		Abnormal NC respiration 0	1	2	3	Vocalization NC 0	1	2	3
EES 0 mg/kg	n	12	0	0	0	12	0	0	0
EES 5 mg/kg	n	12	0	0	0	12	0	0	0
EES 15 mg/kg	n	12	0	0	0	12	0	0	0
EES 50 mg/kg	n	12	0	0	0	12	0	0	0

Test article Dose		Reactivity to NC handling -1	0	1	2	3
EES 0 mg/kg	n	0	12	0	0	0
EES 5 mg/kg	n	0	12	0	0	0
EES 15 mg/kg	n	0	12	0	0	0
EES 50 mg/kg	n	0	12	0	0	0

Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 34 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

In-the-hand observation Period : F0 mating

Generation : F0 Sex : Male Week : 4 Species : Rat

Test article / Dose		Ease of removal from cage NC -1	0	1	2	3	Fur condition NC 0	1	2	3
EES 0 mg/kg	n	0	12	0	0	0	12	0	0	0
EES 5 mg/kg	n	0	12	0	0	0	12	0	0	0
EES 15 mg/kg	n	0	12	0	0	0	12	0	0	0
EES 50 mg/kg	n	0	12	0	0	0	12	0	0	0

Test article / Dose		Skin NC 0	1	2	3	Secretions-Eye, Nose NC 0	1	Exophthalmos NC 0	1
EES 0 mg/kg	n	12	0	0	0	12	0	12	0
EES 5 mg/kg	n	12	0	0	0	12	0	12	0
EES 15 mg/kg	n	12	0	0	0	12	0	12	0
EES 50 mg/kg	n	12	0	0	0	12	0	12	0

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 35 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

In-the-hand observation Period : F0 mating

Generation : F0 Sex : Male Week : 4 Species : Rat

Test article		Palpebral NC closure				Mucosal NC membranes				Lacrimation NC	
Dose		0	1	2	3	0	1	2	3	0	1
EES 0 mg/kg	n	12	0	0	0	12	0	0	0	12	0
EES 5 mg/kg	n	12	0	0	0	12	0	0	0	12	0
EES 15 mg/kg	n	12	0	0	0	12	0	0	0	12	0
EES 50 mg/kg	n	12	0	0	0	12	0	0	0	12	0

Test article		Piloerection NC		Pupil size NC				Salivation NC			
Dose		0	1	-1	0	1	2	0	1	2	3
EES 0 mg/kg	n	12	0	0	12	0	0	12	0	0	0
EES 5 mg/kg	n	12	0	0	12	0	0	12	0	0	0
EES 15 mg/kg	n	12	0	0	12	0	0	12	0	0	0
EES 50 mg/kg	n	12	0	0	12	0	0	12	0	0	0

Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 36 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

In-the-hand observation Period : F0 mating

Generation : F0 Sex : Male Week : 4 Species : Rat

Test article Dose		Abnormal NC respiration 0	1	2	3	Vocalization NC 0	1	2	3
EES 0 mg/kg	n	12	0	0	0	12	0	0	0
EES 5 mg/kg	n	12	0	0	0	12	0	0	0
EES 15 mg/kg	n	12	0	0	0	12	0	0	0
EES 50 mg/kg	n	12	0	0	0	12	0	0	0

Test article Dose		Reactivity to NC handling -1	0	1	2	3
EES 0 mg/kg	n	0	12	0	0	0
EES 5 mg/kg	n	0	12	0	0	0
EES 15 mg/kg	n	0	12	0	0	0
EES 50 mg/kg	n	0	12	0	0	0

Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 37 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

In-the-hand observation Period : F0 mating

Generation : F0 Sex : Male Week : 5 Species : Rat

Test article / Dose		Ease of removal from cage NC -1	0	1	2	3	Fur condition NC 0	1	2	3
EES 0 mg/kg	n	0	12	0	0	0	12	0	0	0
EES 5 mg/kg	n	0	12	0	0	0	12	0	0	0
EES 15 mg/kg	n	0	12	0	0	0	12	0	0	0
EES 50 mg/kg	n	0	12	0	0	0	12	0	0	0

Test article / Dose		Skin NC 0	1	2	3	Secretions-Eye, Nose NC 0	1	Exophthalmos NC 0	1
EES 0 mg/kg	n	12	0	0	0	12	0	12	0
EES 5 mg/kg	n	12	0	0	0	12	0	12	0
EES 15 mg/kg	n	12	0	0	0	12	0	12	0
EES 50 mg/kg	n	12	0	0	0	12	0	12	0

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 38 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

In-the-hand observation Period : F0 mating

Generation : F0 Sex : Male Week : 5 Species : Rat

Test article		Palpebral NC closure				Mucosal NC membranes				Lacrimation NC	
Dose		0	1	2	3	0	1	2	3	0	1
EES 0 mg/kg	n	12	0	0	0	12	0	0	0	12	0
EES 5 mg/kg	n	12	0	0	0	12	0	0	0	12	0
EES 15 mg/kg	n	12	0	0	0	12	0	0	0	12	0
EES 50 mg/kg	n	12	0	0	0	12	0	0	0	12	0

Test article		Piloerection NC		Pupil size NC				Salivation NC			
Dose		0	1	-1	0	1	2	0	1	2	3
EES 0 mg/kg	n	12	0	0	12	0	0	12	0	0	0
EES 5 mg/kg	n	12	0	0	12	0	0	12	0	0	0
EES 15 mg/kg	n	12	0	0	12	0	0	12	0	0	0
EES 50 mg/kg	n	12	0	0	12	0	0	12	0	0	0

Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 39 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

In-the-hand observation Period : F0 mating

Generation : F0 Sex : Male Week : 5 Species : Rat

Test article Dose		Abnormal NC respiration 0	1	2	3	Vocalization NC 0	1	2	3
EES 0 mg/kg	n	12	0	0	0	12	0	0	0
EES 5 mg/kg	n	12	0	0	0	12	0	0	0
EES 15 mg/kg	n	12	0	0	0	12	0	0	0
EES 50 mg/kg	n	12	0	0	0	12	0	0	0

Test article Dose		Reactivity to NC handling -1	0	1	2	3
EES 0 mg/kg	n	0	12	0	0	0
EES 5 mg/kg	n	0	12	0	0	0
EES 15 mg/kg	n	0	12	0	0	0
EES 50 mg/kg	n	0	12	0	0	0

Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 40 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

In-the-hand observation Period : F0 mating

Generation : F0 Sex : Male Week : 6 Species : Rat

Test article		Ease of removal from cage NC					Fur condition NC			
Dose		-1	0	1	2	3	0	1	2	3
EES 0 mg/kg	n	0	12	0	0	0	12	0	0	0
EES 5 mg/kg	n	0	12	0	0	0	12	0	0	0
EES 15 mg/kg	n	0	12	0	0	0	12	0	0	0
EES 50 mg/kg	n	0	12	0	0	0	12	0	0	0

Test article		Skin NC				Secretions-Eye, Nose NC		Exophthalmos NC	
Dose		0	1	2	3	0	1	0	1
EES 0 mg/kg	n	12	0	0	0	12	0	12	0
EES 5 mg/kg	n	12	0	0	0	12	0	12	0
EES 15 mg/kg	n	12	0	0	0	12	0	12	0
EES 50 mg/kg	n	12	0	0	0	12	0	12	0

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 41 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

In-the-hand observation Period : F0 mating

Generation : F0 Sex : Male Week : 6 Species : Rat

Test article		Palpebral NC closure				Mucosal NC membranes				Lacrimation NC	
Dose		0	1	2	3	0	1	2	3	0	1
EES 0 mg/kg	n	12	0	0	0	12	0	0	0	12	0
EES 5 mg/kg	n	12	0	0	0	12	0	0	0	12	0
EES 15 mg/kg	n	12	0	0	0	12	0	0	0	12	0
EES 50 mg/kg	n	12	0	0	0	12	0	0	0	12	0

Test article		Piloerection NC		Pupil size NC				Salivation NC			
Dose		0	1	-1	0	1	2	0	1	2	3
EES 0 mg/kg	n	12	0	0	12	0	0	12	0	0	0
EES 5 mg/kg	n	12	0	0	12	0	0	12	0	0	0
EES 15 mg/kg	n	12	0	0	12	0	0	12	0	0	0
EES 50 mg/kg	n	12	0	0	12	0	0	12	0	0	0

Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 42 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

In-the-hand observation Period : F0 mating

Generation : F0 Sex : Male Week : 6 Species : Rat

Test article Dose		Abnormal NC respiration 0	1	2	3	Vocalization NC 0	1	2	3
EES 0 mg/kg	n	12	0	0	0	12	0	0	0
EES 5 mg/kg	n	12	0	0	0	12	0	0	0
EES 15 mg/kg	n	12	0	0	0	12	0	0	0
EES 50 mg/kg	n	12	0	0	0	12	0	0	0

Test article Dose		Reactivity to NC handling -1	0	1	2	3
EES 0 mg/kg	n	0	12	0	0	0
EES 5 mg/kg	n	0	12	0	0	0
EES 15 mg/kg	n	0	12	0	0	0
EES 50 mg/kg	n	0	12	0	0	0

Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 43 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

In-the-hand observation Period : F0 before mating

Generation : F0 Sex : Female Week : 1 Species : Rat

Test article / Dose		Ease of removal from cage NC					Fur condition NC			
		-1	0	1	2	3	0	1	2	3
EES 0 mg/kg	n	0	12	0	0	0	12	0	0	0
EES 5 mg/kg	n	0	12	0	0	0	12	0	0	0
EES 15 mg/kg	n	0	12	0	0	0	12	0	0	0
EES 50 mg/kg	n	0	12	0	0	0	12	0	0	0

Test article / Dose		Skin NC				Secretions-Eye, Nose NC		Exophthalmos NC	
		0	1	2	3	0	1	0	1
EES 0 mg/kg	n	12	0	0	0	12	0	12	0
EES 5 mg/kg	n	12	0	0	0	12	0	12	0
EES 15 mg/kg	n	12	0	0	0	12	0	12	0
EES 50 mg/kg	n	12	0	0	0	12	0	12	0

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 44 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

In-the-hand observation Period : F0 before mating

Generation : F0 Sex : Female Week : 1 Species : Rat

Test article / Dose		Palpebral NC closure				Mucosal NC membranes				Lacrimation NC	
		0	1	2	3	0	1	2	3	0	1
EES 0 mg/kg	n	12	0	0	0	12	0	0	0	12	0
EES 5 mg/kg	n	12	0	0	0	12	0	0	0	12	0
EES 15 mg/kg	n	12	0	0	0	12	0	0	0	12	0
EES 50 mg/kg	n	12	0	0	0	12	0	0	0	12	0

Test article / Dose		Piloerection NC		Pupil size NC				Salivation NC			
		0	1	-1	0	1	2	0	1	2	3
EES 0 mg/kg	n	12	0	0	12	0	0	12	0	0	0
EES 5 mg/kg	n	12	0	0	12	0	0	12	0	0	0
EES 15 mg/kg	n	12	0	0	12	0	0	12	0	0	0
EES 50 mg/kg	n	12	0	0	12	0	0	12	0	0	0

Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 45 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

In-the-hand observation Period : F0 before mating

Generation : F0 Sex : Female Week : 1 Species : Rat

Test article Dose		Abnormal NC respiration 0	1	2	3	Vocalization NC 0	1	2	3
EES 0 mg/kg	n	12	0	0	0	12	0	0	0
EES 5 mg/kg	n	12	0	0	0	12	0	0	0
EES 15 mg/kg	n	12	0	0	0	12	0	0	0
EES 50 mg/kg	n	12	0	0	0	12	0	0	0

Test article Dose		Reactivity to NC handling -1	0	1	2	3
EES 0 mg/kg	n	0	12	0	0	0
EES 5 mg/kg	n	0	12	0	0	0
EES 15 mg/kg	n	0	12	0	0	0
EES 50 mg/kg	n	0	12	0	0	0

Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 46 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

In-the-hand observation Period : F0 before mating

Generation : F0 Sex : Female Week : 2 Species : Rat

Test article / Dose		Ease of removal from cage NC					Fur condition NC			
		-1	0	1	2	3	0	1	2	3
EES 0 mg/kg	n	0	12	0	0	0	12	0	0	0
EES 5 mg/kg	n	0	12	0	0	0	12	0	0	0
EES 15 mg/kg	n	0	12	0	0	0	12	0	0	0
EES 50 mg/kg	n	0	12	0	0	0	12	0	0	0

Test article / Dose		Skin NC				Secretions- NC Eye, Nose		Exophthalmos NC	
		0	1	2	3	0	1	0	1
EES 0 mg/kg	n	12	0	0	0	12	0	12	0
EES 5 mg/kg	n	12	0	0	0	12	0	12	0
EES 15 mg/kg	n	12	0	0	0	12	0	12	0
EES 50 mg/kg	n	12	0	0	0	12	0	12	0

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 47 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

In-the-hand observation Period : F0 before mating

Generation : F0 Sex : Female Week : 2 Species : Rat

Test article		Palpebral NC closure				Mucosal NC membranes				Lacrimation NC	
Dose		0	1	2	3	0	1	2	3	0	1
EES 0 mg/kg	n	12	0	0	0	12	0	0	0	12	0
EES 5 mg/kg	n	12	0	0	0	12	0	0	0	12	0
EES 15 mg/kg	n	12	0	0	0	12	0	0	0	12	0
EES 50 mg/kg	n	12	0	0	0	12	0	0	0	12	0

Test article		Piloerection NC		Pupil size NC				Salivation NC			
Dose		0	1	-1	0	1	2	0	1	2	3
EES 0 mg/kg	n	12	0	0	12	0	0	12	0	0	0
EES 5 mg/kg	n	12	0	0	12	0	0	12	0	0	0
EES 15 mg/kg	n	12	0	0	12	0	0	12	0	0	0
EES 50 mg/kg	n	12	0	0	12	0	0	12	0	0	0

Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 48 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

In-the-hand observation Period : F0 before mating

Generation : F0 Sex : Female Week : 2 Species : Rat

Test article Dose		Abnormal NC respiration 0	1	2	3	Vocalization NC 0	1	2	3
EES 0 mg/kg	n	12	0	0	0	12	0	0	0
EES 5 mg/kg	n	12	0	0	0	12	0	0	0
EES 15 mg/kg	n	12	0	0	0	12	0	0	0
EES 50 mg/kg	n	12	0	0	0	12	0	0	0

Test article Dose		Reactivity to NC handling -1	0	1	2	3
EES 0 mg/kg	n	0	12	0	0	0
EES 5 mg/kg	n	0	12	0	0	0
EES 15 mg/kg	n	0	12	0	0	0
EES 50 mg/kg	n	0	12	0	0	0

Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 49 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

In-the-hand observation Period : F0 gestation

Generation : F0 Sex : Female Day : 1 Species : Rat

Test article Dose		Ease of removal from cage NC -1	0	1	2	3	Fur condition NC 0	1	2	3
EES 0 mg/kg	n	0	11	0	0	0	11	0	0	0
EES 5 mg/kg	n	0	12	0	0	0	12	0	0	0
EES 15 mg/kg	n	0	11	0	0	0	11	0	0	0
EES 50 mg/kg	n	0	11	0	0	0	11	0	0	0

Test article Dose		Skin NC 0	1	2	3	Secretions-Eye, Nose NC 0	1	Exophthalmos NC 0	1
EES 0 mg/kg	n	11	0	0	0	11	0	11	0
EES 5 mg/kg	n	12	0	0	0	12	0	12	0
EES 15 mg/kg	n	11	0	0	0	11	0	11	0
EES 50 mg/kg	n	11	0	0	0	11	0	11	0

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 50 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

In-the-hand observation Period : F0 gestation

Generation : F0 Sex : Female Day : 1 Species : Rat

Test article		Palpebral NC closure				Mucosal NC membranes				Lacrimation NC	
Dose		0	1	2	3	0	1	2	3	0	1
EES 0 mg/kg	n	11	0	0	0	11	0	0	0	11	0
EES 5 mg/kg	n	12	0	0	0	12	0	0	0	12	0
EES 15 mg/kg	n	11	0	0	0	11	0	0	0	11	0
EES 50 mg/kg	n	11	0	0	0	11	0	0	0	11	0

Test article		Piloerection NC		Pupil size NC				Salivation NC			
Dose		0	1	-1	0	1	2	0	1	2	3
EES 0 mg/kg	n	11	0	0	11	0	0	11	0	0	0
EES 5 mg/kg	n	12	0	0	12	0	0	12	0	0	0
EES 15 mg/kg	n	11	0	0	11	0	0	11	0	0	0
EES 50 mg/kg	n	11	0	0	11	0	0	11	0	0	0

Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 51 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

In-the-hand observation Period : F0 gestation

Generation : F0 Sex : Female Day : 1 Species : Rat

Test article Dose		Abnormal NC respiration 0	1	2	3	Vocalization NC 0	1	2	3
EES 0 mg/kg	n	11	0	0	0	11	0	0	0
EES 5 mg/kg	n	12	0	0	0	12	0	0	0
EES 15 mg/kg	n	11	0	0	0	11	0	0	0
EES 50 mg/kg	n	11	0	0	0	11	0	0	0

Test article Dose		Reactivity to NC handling -1	0	1	2	3
EES 0 mg/kg	n	0	11	0	0	0
EES 5 mg/kg	n	0	12	0	0	0
EES 15 mg/kg	n	0	11	0	0	0
EES 50 mg/kg	n	0	11	0	0	0

Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 52 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

In-the-hand observation Period : F0 gestation

Generation : F0 Sex : Female Day : 7 Species : Rat

Test article Dose		Ease of removal from cage NC -1	0	1	2	3	Fur condition NC 0	1	2	3
EES 0 mg/kg	n	0	11	0	0	0	11	0	0	0
EES 5 mg/kg	n	0	12	0	0	0	12	0	0	0
EES 15 mg/kg	n	0	11	0	0	0	11	0	0	0
EES 50 mg/kg	n	0	11	0	0	0	11	0	0	0

Test article Dose		Skin NC 0	1	2	3	Secretions-Eye, Nose NC 0	1	Exophthalmos NC 0	1
EES 0 mg/kg	n	11	0	0	0	11	0	11	0
EES 5 mg/kg	n	12	0	0	0	12	0	12	0
EES 15 mg/kg	n	11	0	0	0	11	0	11	0
EES 50 mg/kg	n	11	0	0	0	11	0	11	0

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 53 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

In-the-hand observation Period : F0 gestation

Generation : F0 Sex : Female Day : 7 Species : Rat

Test article		Palpebral NC closure				Mucosal NC membranes				Lacrimation NC	
Dose		0	1	2	3	0	1	2	3	0	1
EES 0 mg/kg	n	11	0	0	0	11	0	0	0	11	0
EES 5 mg/kg	n	12	0	0	0	12	0	0	0	12	0
EES 15 mg/kg	n	11	0	0	0	11	0	0	0	11	0
EES 50 mg/kg	n	11	0	0	0	11	0	0	0	11	0

Test article		Piloerection NC		Pupil size NC				Salivation NC			
Dose		0	1	-1	0	1	2	0	1	2	3
EES 0 mg/kg	n	11	0	0	11	0	0	11	0	0	0
EES 5 mg/kg	n	12	0	0	12	0	0	12	0	0	0
EES 15 mg/kg	n	11	0	0	11	0	0	11	0	0	0
EES 50 mg/kg	n	11	0	0	11	0	0	11	0	0	0

Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 54 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

In-the-hand observation Period : F0 gestation

Generation : F0 Sex : Female Day : 7 Species : Rat

Test article Dose		Abnormal NC respiration 0	1	2	3	Vocalization NC 0	1	2	3
EES 0 mg/kg	n	11	0	0	0	11	0	0	0
EES 5 mg/kg	n	12	0	0	0	12	0	0	0
EES 15 mg/kg	n	11	0	0	0	11	0	0	0
EES 50 mg/kg	n	11	0	0	0	11	0	0	0

Test article Dose		Reactivity to NC handling -1	0	1	2	3
EES 0 mg/kg	n	0	11	0	0	0
EES 5 mg/kg	n	0	12	0	0	0
EES 15 mg/kg	n	0	11	0	0	0
EES 50 mg/kg	n	0	11	0	0	0

Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 55 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

In-the-hand observation Period : F0 gestation

Generation : F0 Sex : Female Day : 14 Species : Rat

Test article Dose		Ease of removal from cage NC -1	0	1	2	3	Fur condition NC 0	1	2	3
EES 0 mg/kg	n	0	11	0	0	0	11	0	0	0
EES 5 mg/kg	n	0	12	0	0	0	12	0	0	0
EES 15 mg/kg	n	0	11	0	0	0	11	0	0	0
EES 50 mg/kg	n	0	11	0	0	0	11	0	0	0

Test article Dose		Skin NC 0	1	2	3	Secretions-Eye, Nose NC 0	1	Exophthalmos NC 0	1
EES 0 mg/kg	n	11	0	0	0	11	0	11	0
EES 5 mg/kg	n	12	0	0	0	12	0	12	0
EES 15 mg/kg	n	11	0	0	0	11	0	11	0
EES 50 mg/kg	n	11	0	0	0	11	0	11	0

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 56 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

In-the-hand observation Period : F0 gestation

Generation : F0 Sex : Female Day : 14 Species : Rat

Test article		Palpebral NC closure				Mucosal NC membranes				Lacrimation NC	
Dose		0	1	2	3	0	1	2	3	0	1
EES 0 mg/kg	n	11	0	0	0	11	0	0	0	11	0
EES 5 mg/kg	n	12	0	0	0	12	0	0	0	12	0
EES 15 mg/kg	n	11	0	0	0	11	0	0	0	11	0
EES 50 mg/kg	n	11	0	0	0	11	0	0	0	11	0

Test article		Piloerection NC		Pupil size NC				Salivation NC			
Dose		0	1	-1	0	1	2	0	1	2	3
EES 0 mg/kg	n	11	0	0	11	0	0	11	0	0	0
EES 5 mg/kg	n	12	0	0	12	0	0	12	0	0	0
EES 15 mg/kg	n	11	0	0	11	0	0	11	0	0	0
EES 50 mg/kg	n	11	0	0	11	0	0	11	0	0	0

Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 57 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

In-the-hand observation Period : F0 gestation

Generation : F0 Sex : Female Day : 14 Species : Rat

Test article Dose		Abnormal NC respiration 0	1	2	3	Vocalization NC 0	1	2	3
EES 0 mg/kg	n	11	0	0	0	11	0	0	0
EES 5 mg/kg	n	12	0	0	0	12	0	0	0
EES 15 mg/kg	n	11	0	0	0	11	0	0	0
EES 50 mg/kg	n	11	0	0	0	11	0	0	0

Test article Dose		Reactivity to NC handling -1	0	1	2	3
EES 0 mg/kg	n	0	11	0	0	0
EES 5 mg/kg	n	0	12	0	0	0
EES 15 mg/kg	n	0	11	0	0	0
EES 50 mg/kg	n	0	11	0	0	0

Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 58 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

In-the-hand observation Period : F0 gestation

Generation : F0 Sex : Female Day : 20 Species : Rat

Test article / Dose		Ease of removal from cage NC -1	0	1	2	3	Fur condition NC 0	1	2	3
EES 0 mg/kg	n	0	11	0	0	0	11	0	0	0
EES 5 mg/kg	n	0	12	0	0	0	12	0	0	0
EES 15 mg/kg	n	0	11	0	0	0	11	0	0	0
EES 50 mg/kg	n	0	11	0	0	0	11	0	0	0

Test article / Dose		Skin NC 0	1	2	3	Secretions-Eye, Nose NC 0	1	Exophthalmos NC 0	1
EES 0 mg/kg	n	11	0	0	0	11	0	11	0
EES 5 mg/kg	n	12	0	0	0	12	0	12	0
EES 15 mg/kg	n	11	0	0	0	11	0	11	0
EES 50 mg/kg	n	11	0	0	0	11	0	11	0

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 59 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

In-the-hand observation Period : F0 gestation

Generation : F0 Sex : Female Day : 20 Species : Rat

Test article		Palpebral NC closure				Mucosal NC membranes				Lacrimation NC	
Dose		0	1	2	3	0	1	2	3	0	1
EES 0 mg/kg	n	11	0	0	0	11	0	0	0	11	0
EES 5 mg/kg	n	12	0	0	0	12	0	0	0	12	0
EES 15 mg/kg	n	11	0	0	0	11	0	0	0	11	0
EES 50 mg/kg	n	11	0	0	0	11	0	0	0	11	0

Test article		Piloerection NC		Pupil size NC				Salivation NC			
Dose		0	1	-1	0	1	2	0	1	2	3
EES 0 mg/kg	n	11	0	0	11	0	0	11	0	0	0
EES 5 mg/kg	n	12	0	0	12	0	0	12	0	0	0
EES 15 mg/kg	n	11	0	0	11	0	0	11	0	0	0
EES 50 mg/kg	n	11	0	0	11	0	0	11	0	0	0

Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 60 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

In-the-hand observation Period : F0 gestation

Generation : F0 Sex : Female Day : 20 Species : Rat

Test article Dose		Abnormal NC respiration 0	1	2	3	Vocalization NC 0	1	2	3
EES 0 mg/kg	n	11	0	0	0	11	0	0	0
EES 5 mg/kg	n	12	0	0	0	12	0	0	0
EES 15 mg/kg	n	11	0	0	0	11	0	0	0
EES 50 mg/kg	n	11	0	0	0	11	0	0	0

Test article Dose		Reactivity to NC handling -1	0	1	2	3
EES 0 mg/kg	n	0	11	0	0	0
EES 5 mg/kg	n	0	12	0	0	0
EES 15 mg/kg	n	0	11	0	0	0
EES 50 mg/kg	n	0	11	0	0	0

Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 61 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

In-the-hand observation Period : F0 lactation

Generation : F0 Sex : Female Day : 6 Species : Rat

Test article Dose		Ease of removal from cage NC -1	0	1	2	3	Fur condition NC 0	1	2	3
EES 0 mg/kg	n	0	11	0	0	0	11	0	0	0
EES 5 mg/kg	n	0	12	0	0	0	12	0	0	0
EES 15 mg/kg	n	0	10	0	0	0	10	0	0	0
EES 50 mg/kg	n	0	11	0	0	0	11	0	0	0

Test article Dose		Skin NC 0	1	2	3	Secretions-Eye, Nose NC 0	1	Exophthalmos NC 0	1
EES 0 mg/kg	n	11	0	0	0	11	0	11	0
EES 5 mg/kg	n	12	0	0	0	12	0	12	0
EES 15 mg/kg	n	10	0	0	0	10	0	10	0
EES 50 mg/kg	n	11	0	0	0	11	0	11	0

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 62 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

In-the-hand observation Period : F0 lactation

Generation : F0 Sex : Female Day : 6 Species : Rat

Test article		Palpebral NC closure				Mucosal NC membranes				Lacrimation NC	
Dose		0	1	2	3	0	1	2	3	0	1
EES 0 mg/kg	n	11	0	0	0	11	0	0	0	11	0
EES 5 mg/kg	n	12	0	0	0	12	0	0	0	12	0
EES 15 mg/kg	n	10	0	0	0	10	0	0	0	10	0
EES 50 mg/kg	n	11	0	0	0	11	0	0	0	11	0

Test article		Piloerection NC		Pupil size NC				Salivation NC			
Dose		0	1	-1	0	1	2	0	1	2	3
EES 0 mg/kg	n	11	0	0	11	0	0	11	0	0	0
EES 5 mg/kg	n	12	0	0	12	0	0	12	0	0	0
EES 15 mg/kg	n	10	0	0	10	0	0	10	0	0	0
EES 50 mg/kg	n	11	0	0	11	0	0	11	0	0	0

Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 63 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

In-the-hand observation Period : F0 lactation

Generation : F0 Sex : Female Day : 6 Species : Rat

Test article Dose		Abnormal NC respiration 0	1	2	3	Vocalization NC 0	1	2	3
EES 0 mg/kg	n	11	0	0	0	11	0	0	0
EES 5 mg/kg	n	12	0	0	0	12	0	0	0
EES 15 mg/kg	n	10	0	0	0	10	0	0	0
EES 50 mg/kg	n	11	0	0	0	11	0	0	0

Test article Dose		Reactivity to NC handling -1	0	1	2	3
EES 0 mg/kg	n	0	11	0	0	0
EES 5 mg/kg	n	0	12	0	0	0
EES 15 mg/kg	n	0	10	0	0	0
EES 50 mg/kg	n	0	11	0	0	0

Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 64 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

In-the-hand observation Period : F0 lactation

Generation : F0 Sex : Female Day : 13 Species : Rat

Test article / Dose		Ease of removal from cage NC					Fur condition NC			
		-1	0	1	2	3	0	1	2	3
EES 0 mg/kg	n	0	11	0	0	0	11	0	0	0
EES 5 mg/kg	n	0	12	0	0	0	12	0	0	0
EES 15 mg/kg	n	0	10	0	0	0	10	0	0	0
EES 50 mg/kg	n	0	11	0	0	0	11	0	0	0

Test article / Dose		Skin NC				Secretions- NC Eye, Nose		Exophthalmos NC	
		0	1	2	3	0	1	0	1
EES 0 mg/kg	n	11	0	0	0	11	0	11	0
EES 5 mg/kg	n	12	0	0	0	12	0	12	0
EES 15 mg/kg	n	10	0	0	0	10	0	10	0
EES 50 mg/kg	n	11	0	0	0	11	0	11	0

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 65 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

In-the-hand observation Period : F0 lactation

Generation : F0 Sex : Female Day : 13 Species : Rat

Test article		Palpebral NC closure				Mucosal NC membranes				Lacrimation NC	
Dose		0	1	2	3	0	1	2	3	0	1
EES 0 mg/kg	n	11	0	0	0	11	0	0	0	11	0
EES 5 mg/kg	n	12	0	0	0	12	0	0	0	12	0
EES 15 mg/kg	n	10	0	0	0	10	0	0	0	10	0
EES 50 mg/kg	n	11	0	0	0	11	0	0	0	11	0

Test article		Piloerection NC		Pupil size NC				Salivation NC			
Dose		0	1	-1	0	1	2	0	1	2	3
EES 0 mg/kg	n	11	0	0	11	0	0	11	0	0	0
EES 5 mg/kg	n	12	0	0	12	0	0	12	0	0	0
EES 15 mg/kg	n	10	0	0	10	0	0	10	0	0	0
EES 50 mg/kg	n	11	0	0	11	0	0	11	0	0	0

Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 66 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

In-the-hand observation Period : F0 lactation

Generation : F0 Sex : Female Day : 13 Species : Rat

Test article Dose		Abnormal NC respiration 0	1	2	3	Vocalization NC 0	1	2	3
EES 0 mg/kg	n	11	0	0	0	11	0	0	0
EES 5 mg/kg	n	12	0	0	0	12	0	0	0
EES 15 mg/kg	n	10	0	0	0	10	0	0	0
EES 50 mg/kg	n	11	0	0	0	11	0	0	0

Test article Dose		Reactivity to NC handling -1	0	1	2	3
EES 0 mg/kg	n	0	11	0	0	0
EES 5 mg/kg	n	0	12	0	0	0
EES 15 mg/kg	n	0	10	0	0	0
EES 50 mg/kg	n	0	11	0	0	0

Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 67 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

In-the-hand observation Period : Administration (non-mating group)

Generation : F0 Sex : Female Week : 1 Species : Rat

Test article		Ease of removal from cage NC					Fur condition NC			
Dose		-1	0	1	2	3	0	1	2	3
EES 0 mg/kg	n	0	10	0	0	0	10	0	0	0
EES 50 mg/kg	n	0	10	0	0	0	10	0	0	0

Test article		Skin NC				Secretions-Eye, Nose NC		Exophthalmos NC	
Dose		0	1	2	3	0	1	0	1
EES 0 mg/kg	n	10	0	0	0	10	0	10	0
EES 50 mg/kg	n	10	0	0	0	10	0	10	0

Test article		Palpebral closure NC				Mucosal membranes NC				Lacrimation NC	
Dose		0	1	2	3	0	1	2	3	0	1
EES 0 mg/kg	n	10	0	0	0	10	0	0	0	10	0
EES 50 mg/kg	n	10	0	0	0	10	0	0	0	10	0

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 68 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

In-the-hand observation Period : Administration (non-mating group)

Generation : F0 Sex : Female Week : 1 Species : Rat

Test article		Piloerection NC		Pupil size NC				Salivation NC			
Dose		0	1	-1	0	1	2	0	1	2	3
EES 0 mg/kg	n	10	0	0	10	0	0	10	0	0	0
EES 50 mg/kg	n	10	0	0	10	0	0	10	0	0	0

Test article		Abnormal NC respiration				Vocalization NC			
Dose		0	1	2	3	0	1	2	3
EES 0 mg/kg	n	10	0	0	0	10	0	0	0
EES 50 mg/kg	n	10	0	0	0	10	0	0	0

Test article		Reactivity to NC handling				
Dose		-1	0	1	2	3
EES 0 mg/kg	n	0	10	0	0	0
EES 50 mg/kg	n	0	10	0	0	0

Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 69 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

In-the-hand observation Period : Administration (non-mating group)

Generation : F0 Sex : Female Week : 2 Species : Rat

Test article		Ease of removal from cage NC					Fur condition NC			
Dose		-1	0	1	2	3	0	1	2	3
EES 0 mg/kg	n	0	10	0	0	0	10	0	0	0
EES 50 mg/kg	n	0	10	0	0	0	10	0	0	0

Test article		Skin NC				Secretions-Eye, Nose NC		Exophthalmos NC	
Dose		0	1	2	3	0	1	0	1
EES 0 mg/kg	n	10	0	0	0	10	0	10	0
EES 50 mg/kg	n	10	0	0	0	10	0	10	0

Test article		Palpebral closure NC				Mucosal membranes NC				Lacrimation NC	
Dose		0	1	2	3	0	1	2	3	0	1
EES 0 mg/kg	n	10	0	0	0	10	0	0	0	10	0
EES 50 mg/kg	n	10	0	0	0	10	0	0	0	10	0

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 70 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

In-the-hand observation Period : Administration (non-mating group)

Generation : F0 Sex : Female Week : 2 Species : Rat

Test article		Piloerection NC		Pupil size NC				Salivation NC			
Dose		0	1	-1	0	1	2	0	1	2	3
EES 0 mg/kg	n	10	0	0	10	0	0	10	0	0	0
EES 50 mg/kg	n	10	0	0	10	0	0	10	0	0	0

Test article		Abnormal NC respiration				Vocalization NC			
Dose		0	1	2	3	0	1	2	3
EES 0 mg/kg	n	10	0	0	0	10	0	0	0
EES 50 mg/kg	n	10	0	0	0	10	0	0	0

Test article		Reactivity to NC handling				
Dose		-1	0	1	2	3
EES 0 mg/kg	n	0	10	0	0	0
EES 50 mg/kg	n	0	10	0	0	0

Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 71 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

In-the-hand observation Period : Administration (non-mating group)

Generation : F0 Sex : Female Week : 3 Species : Rat

Test article		Ease of removal from cage NC					Fur condition NC			
Dose		-1	0	1	2	3	0	1	2	3
EES 0 mg/kg	n	0	10	0	0	0	10	0	0	0
EES 50 mg/kg	n	0	10	0	0	0	10	0	0	0

Test article		Skin NC				Secretions-Eye, Nose NC		Exophthalmos NC	
Dose		0	1	2	3	0	1	0	1
EES 0 mg/kg	n	10	0	0	0	10	0	10	0
EES 50 mg/kg	n	10	0	0	0	10	0	10	0

Test article		Palpebral closure NC				Mucosal membranes NC				Lacrimation NC	
Dose		0	1	2	3	0	1	2	3	0	1
EES 0 mg/kg	n	10	0	0	0	10	0	0	0	10	0
EES 50 mg/kg	n	10	0	0	0	10	0	0	0	10	0

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 72 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

In-the-hand observation Period : Administration (non-mating group)

Generation : F0 Sex : Female Week : 3 Species : Rat

Test article		Piloerection NC		Pupil size NC				Salivation NC			
Dose		0	1	-1	0	1	2	0	1	2	3
EES 0 mg/kg	n	10	0	0	10	0	0	10	0	0	0
EES 50 mg/kg	n	10	0	0	10	0	0	10	0	0	0

Test article		Abnormal NC respiration				Vocalization NC			
Dose		0	1	2	3	0	1	2	3
EES 0 mg/kg	n	10	0	0	0	10	0	0	0
EES 50 mg/kg	n	10	0	0	0	10	0	0	0

Test article		Reactivity to NC handling				
Dose		-1	0	1	2	3
EES 0 mg/kg	n	0	10	0	0	0
EES 50 mg/kg	n	0	10	0	0	0

Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 73 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

In-the-hand observation Period : Administration (non-mating group)

Generation : F0 Sex : Female Week : 4 Species : Rat

Test article		Ease of removal from cage NC					Fur condition NC			
Dose		-1	0	1	2	3	0	1	2	3
EES 0 mg/kg	n	0	10	0	0	0	10	0	0	0
EES 50 mg/kg	n	0	10	0	0	0	10	0	0	0

Test article		Skin NC				Secretions-Eye, Nose NC		Exophthalmos NC	
Dose		0	1	2	3	0	1	0	1
EES 0 mg/kg	n	10	0	0	0	10	0	10	0
EES 50 mg/kg	n	10	0	0	0	10	0	10	0

Test article		Palpebral closure NC				Mucosal membranes NC				Lacrimation NC	
Dose		0	1	2	3	0	1	2	3	0	1
EES 0 mg/kg	n	10	0	0	0	10	0	0	0	10	0
EES 50 mg/kg	n	10	0	0	0	10	0	0	0	10	0

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 74 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

In-the-hand observation Period : Administration (non-mating group)

Generation : F0 Sex : Female Week : 4 Species : Rat

Test article		Piloerection NC		Pupil size NC				Salivation NC			
Dose		0	1	-1	0	1	2	0	1	2	3
EES 0 mg/kg	n	10	0	0	10	0	0	10	0	0	0
EES 50 mg/kg	n	10	0	0	10	0	0	10	0	0	0

Test article		Abnormal NC respiration				Vocalization NC			
Dose		0	1	2	3	0	1	2	3
EES 0 mg/kg	n	10	0	0	0	10	0	0	0
EES 50 mg/kg	n	10	0	0	0	10	0	0	0

Test article		Reactivity to NC handling				
Dose		-1	0	1	2	3
EES 0 mg/kg	n	0	10	0	0	0
EES 50 mg/kg	n	0	10	0	0	0

Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 75 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

In-the-hand observation Period : Administration (non-mating group)

Generation : F0 Sex : Female Week : 5 Species : Rat

Test article		Ease of removal from cage NC					Fur condition NC			
Dose		-1	0	1	2	3	0	1	2	3
EES 0 mg/kg	n	0	10	0	0	0	10	0	0	0
EES 50 mg/kg	n	0	10	0	0	0	10	0	0	0

Test article		Skin NC				Secretions-Eye, Nose NC		Exophthalmos NC	
Dose		0	1	2	3	0	1	0	1
EES 0 mg/kg	n	10	0	0	0	10	0	10	0
EES 50 mg/kg	n	10	0	0	0	10	0	10	0

Test article		Palpebral closure NC				Mucosal membranes NC				Lacrimation NC	
Dose		0	1	2	3	0	1	2	3	0	1
EES 0 mg/kg	n	10	0	0	0	10	0	0	0	10	0
EES 50 mg/kg	n	10	0	0	0	10	0	0	0	10	0

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 76 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

In-the-hand observation Period : Administration (non-mating group)

Generation : F0 Sex : Female Week : 5 Species : Rat

Test article		Piloerection NC		Pupil size NC				Salivation NC			
Dose		0	1	-1	0	1	2	0	1	2	3
EES 0 mg/kg	n	10	0	0	10	0	0	10	0	0	0
EES 50 mg/kg	n	10	0	0	10	0	0	10	0	0	0

Test article		Abnormal NC respiration				Vocalization NC			
Dose		0	1	2	3	0	1	2	3
EES 0 mg/kg	n	10	0	0	0	10	0	0	0
EES 50 mg/kg	n	10	0	0	0	10	0	0	0

Test article		Reactivity to NC handling				
Dose		-1	0	1	2	3
EES 0 mg/kg	n	0	10	0	0	0
EES 50 mg/kg	n	0	10	0	0	0

Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 77 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

In-the-hand observation Period : Administration (non-mating group)

Generation : F0 Sex : Female Week : 6 Species : Rat

Test article		Ease of removal from cage NC					Fur condition NC			
Dose		-1	0	1	2	3	0	1	2	3
EES 0 mg/kg	n	0	10	0	0	0	10	0	0	0
EES 50 mg/kg	n	0	10	0	0	0	10	0	0	0

Test article		Skin NC				Secretions-Eye, Nose NC		Exophthalmos NC	
Dose		0	1	2	3	0	1	0	1
EES 0 mg/kg	n	10	0	0	0	10	0	10	0
EES 50 mg/kg	n	10	0	0	0	10	0	10	0

Test article		Palpebral closure NC				Mucosal membranes NC				Lacrimation NC	
Dose		0	1	2	3	0	1	2	3	0	1
EES 0 mg/kg	n	10	0	0	0	10	0	0	0	10	0
EES 50 mg/kg	n	10	0	0	0	10	0	0	0	10	0

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 78 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

In-the-hand observation Period : Administration (non-mating group)

Generation : F0 Sex : Female Week : 6 Species : Rat

Test article		Piloerection NC		Pupil size NC				Salivation NC			
Dose		0	1	-1	0	1	2	0	1	2	3
EES 0 mg/kg	n	10	0	0	10	0	0	10	0	0	0
EES 50 mg/kg	n	10	0	0	10	0	0	10	0	0	0

Test article		Abnormal NC respiration				Vocalization NC			
Dose		0	1	2	3	0	1	2	3
EES 0 mg/kg	n	10	0	0	0	10	0	0	0
EES 50 mg/kg	n	10	0	0	0	10	0	0	0

Test article		Reactivity to NC handling				
Dose		-1	0	1	2	3
EES 0 mg/kg	n	0	10	0	0	0
EES 50 mg/kg	n	0	10	0	0	0

Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 79 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

In-the-hand observation Period : Recovery

Generation : F0 Sex : Male Week : 1 Species : Rat

Test article		Ease of removal from cage NC					Fur condition NC			
Dose		-1	0	1	2	3	0	1	2	3
EES 0 mg/kg	n	0	5	0	0	0	5	0	0	0
EES 50 mg/kg	n	0	5	0	0	0	5	0	0	0

Test article		Skin NC				Secretions-Eye, Nose NC		Exophthalmos NC	
Dose		0	1	2	3	0	1	0	1
EES 0 mg/kg	n	5	0	0	0	5	0	5	0
EES 50 mg/kg	n	5	0	0	0	5	0	5	0

Test article		Palpebral closure NC				Mucosal membranes NC				Lacrimation NC	
Dose		0	1	2	3	0	1	2	3	0	1
EES 0 mg/kg	n	5	0	0	0	5	0	0	0	5	0
EES 50 mg/kg	n	5	0	0	0	5	0	0	0	5	0

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 80 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

In-the-hand observation Period : Recovery

Generation : F0 Sex : Male Week : 1 Species : Rat

Test article		Piloerection NC		Pupil size NC				Salivation NC			
Dose		0	1	-1	0	1	2	0	1	2	3
EES 0 mg/kg	n	5	0	0	5	0	0	5	0	0	0
EES 50 mg/kg	n	5	0	0	5	0	0	5	0	0	0

Test article		Abnormal NC respiration				Vocalization NC			
Dose		0	1	2	3	0	1	2	3
EES 0 mg/kg	n	5	0	0	0	5	0	0	0
EES 50 mg/kg	n	5	0	0	0	5	0	0	0

Test article		Reactivity to NC handling				
Dose		-1	0	1	2	3
EES 0 mg/kg	n	0	5	0	0	0
EES 50 mg/kg	n	0	5	0	0	0

Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 81 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

In-the-hand observation Period : Recovery

Generation : F0 Sex : Male Week : 2 Species : Rat

Test article		Ease of removal from cage NC					Fur condition NC			
Dose		-1	0	1	2	3	0	1	2	3
EES 0 mg/kg	n	0	5	0	0	0	5	0	0	0
EES 50 mg/kg	n	0	5	0	0	0	5	0	0	0

Test article		Skin NC				Secretions-Eye, Nose NC		Exophthalmos NC	
Dose		0	1	2	3	0	1	0	1
EES 0 mg/kg	n	5	0	0	0	5	0	5	0
EES 50 mg/kg	n	5	0	0	0	5	0	5	0

Test article		Palpebral closure NC				Mucosal membranes NC				Lacrimation NC	
Dose		0	1	2	3	0	1	2	3	0	1
EES 0 mg/kg	n	5	0	0	0	5	0	0	0	5	0
EES 50 mg/kg	n	5	0	0	0	5	0	0	0	5	0

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 82 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

In-the-hand observation Period : Recovery

Generation : F0 Sex : Male Week : 2 Species : Rat

Test article		Piloerection NC		Pupil size NC				Salivation NC			
Dose		0	1	-1	0	1	2	0	1	2	3
EES 0 mg/kg	n	5	0	0	5	0	0	5	0	0	0
EES 50 mg/kg	n	5	0	0	5	0	0	5	0	0	0

Test article		Abnormal NC respiration				Vocalization NC			
Dose		0	1	2	3	0	1	2	3
EES 0 mg/kg	n	5	0	0	0	5	0	0	0
EES 50 mg/kg	n	5	0	0	0	5	0	0	0

Test article		Reactivity to NC handling				
Dose		-1	0	1	2	3
EES 0 mg/kg	n	0	5	0	0	0
EES 50 mg/kg	n	0	5	0	0	0

Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 83 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

In-the-hand observation Period : Recovery (non-mating group)

Generation : F0 Sex : Female Week : 1 Species : Rat

Test article		Ease of removal from cage NC					Fur condition NC			
Dose		-1	0	1	2	3	0	1	2	3
EES 0 mg/kg	n	0	5	0	0	0	5	0	0	0
EES 50 mg/kg	n	0	5	0	0	0	5	0	0	0

Test article		Skin NC				Secretions-Eye, Nose NC		Exophthalmos NC	
Dose		0	1	2	3	0	1	0	1
EES 0 mg/kg	n	5	0	0	0	5	0	5	0
EES 50 mg/kg	n	5	0	0	0	5	0	5	0

Test article		Palpebral closure NC				Mucosal membranes NC				Lacrimation NC	
Dose		0	1	2	3	0	1	2	3	0	1
EES 0 mg/kg	n	5	0	0	0	5	0	0	0	5	0
EES 50 mg/kg	n	5	0	0	0	5	0	0	0	5	0

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 84 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

In-the-hand observation Period : Recovery (non-mating group)

Generation : F0 Sex : Female Week : 1 Species : Rat

Test article		Piloerection NC		Pupil size NC				Salivation NC			
Dose		0	1	-1	0	1	2	0	1	2	3
EES 0 mg/kg	n	5	0	0	5	0	0	5	0	0	0
EES 50 mg/kg	n	5	0	0	5	0	0	5	0	0	0

Test article		Abnormal NC respiration				Vocalization NC			
Dose		0	1	2	3	0	1	2	3
EES 0 mg/kg	n	5	0	0	0	5	0	0	0
EES 50 mg/kg	n	5	0	0	0	5	0	0	0

Test article		Reactivity to NC handling				
Dose		-1	0	1	2	3
EES 0 mg/kg	n	0	5	0	0	0
EES 50 mg/kg	n	0	5	0	0	0

Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 85 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

In-the-hand observation Period : Recovery (non-mating group)

Generation : F0 Sex : Female Week : 2 Species : Rat

Test article		Ease of removal from cage NC					Fur condition NC			
Dose		-1	0	1	2	3	0	1	2	3
EES 0 mg/kg	n	0	5	0	0	0	5	0	0	0
EES 50 mg/kg	n	0	5	0	0	0	5	0	0	0

Test article		Skin NC				Secretions-Eye, Nose NC		Exophthalmos NC	
Dose		0	1	2	3	0	1	0	1
EES 0 mg/kg	n	5	0	0	0	5	0	5	0
EES 50 mg/kg	n	5	0	0	0	5	0	5	0

Test article		Palpebral closure NC				Mucosal membranes NC				Lacrimation NC	
Dose		0	1	2	3	0	1	2	3	0	1
EES 0 mg/kg	n	5	0	0	0	5	0	0	0	5	0
EES 50 mg/kg	n	5	0	0	0	5	0	0	0	5	0

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 86 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

In-the-hand observation Period : Recovery (non-mating group)

Generation : F0 Sex : Female Week : 2 Species : Rat

Test article		Piloerection NC		Pupil size NC				Salivation NC			
Dose		0	1	-1	0	1	2	0	1	2	3
EES 0 mg/kg	n	5	0	0	5	0	0	5	0	0	0
EES 50 mg/kg	n	5	0	0	5	0	0	5	0	0	0

Test article		Abnormal NC respiration				Vocalization NC			
Dose		0	1	2	3	0	1	2	3
EES 0 mg/kg	n	5	0	0	0	5	0	0	0
EES 50 mg/kg	n	5	0	0	0	5	0	0	0

Test article		Reactivity to NC handling				
Dose		-1	0	1	2	3
EES 0 mg/kg	n	0	5	0	0	0
EES 50 mg/kg	n	0	5	0	0	0

Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 87 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Open field observation Period : F0 before mating

Generation : F0 Sex : Male Week : 1 Species : Rat

Test article		Arousal NC					Convulsion NC			
Dose		-2	-1	0	1	2	0	1	2	3
EES 0 mg/kg	n	0	0	12	0	0	12	0	0	0
EES 5 mg/kg	n	0	0	12	0	0	12	0	0	0
EES 15 mg/kg	n	0	0	12	0	0	12	0	0	0
EES 50 mg/kg	n	0	0	12	0	0	12	0	0	0

Test article		Abnormal NC behavior				Stereotypy NC			
Dose		0	1	2	3	0	1	2	3
EES 0 mg/kg	n	12	0	0	0	12	0	0	0
EES 5 mg/kg	n	12	0	0	0	12	0	0	0
EES 15 mg/kg	n	12	0	0	0	12	0	0	0
EES 50 mg/kg	n	12	0	0	0	12	0	0	0

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 88 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Open field observation Period : F0 before mating

Generation : F0 Sex : Male Week : 1 Species : Rat

Test article Dose		Gait NC					Posture NC		
		U	0	1	2	3	N	F	H
EES 0 mg/kg	n	0	12	0	0	0	12	0	0
EES 5 mg/kg	n	0	12	0	0	0	12	0	0
EES 15 mg/kg	n	0	12	0	0	0	12	0	0
EES 50 mg/kg	n	0	12	0	0	0	12	0	0

Test article Dose		Grooming NC			Urination NC			
		0	1	2	0	1	2	3
EES 0 mg/kg	n	12	0	0	11	1	0	0
EES 5 mg/kg	n	12	0	0	11	1	0	0
EES 15 mg/kg	n	12	0	0	11	1	0	0
EES 50 mg/kg	n	12	0	0	11	1	0	0

Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 89 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Open field observation Period : F0 before mating

Generation : F0 Sex : Male Week : 1 Species : Rat

Test article Dose		Rearing	Defecation count
EES 0 mg/kg	n	12	12
	Mean	4	0
	S.D.	3	0
EES 5 mg/kg	n	12	12
	Mean	4	0
	S.D.	2	0
EES 15 mg/kg	n	12	12
	Mean	4	0
	S.D.	3	0
EES 50 mg/kg	n	12	12
	Mean	4	0
	S.D.	2	0

Not significantly different from EES 0 mg/kg

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 90 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Open field observation Period : F0 before mating

Generation : F0 Sex : Male Week : 2 Species : Rat

Test article		Arousal NC					Convulsion NC			
Dose		-2	-1	0	1	2	0	1	2	3
EES 0 mg/kg	n	0	0	12	0	0	12	0	0	0
EES 5 mg/kg	n	0	0	12	0	0	12	0	0	0
EES 15 mg/kg	n	0	0	12	0	0	12	0	0	0
EES 50 mg/kg	n	0	0	12	0	0	12	0	0	0

Test article		Abnormal NC behavior				Stereotypy NC			
Dose		0	1	2	3	0	1	2	3
EES 0 mg/kg	n	12	0	0	0	12	0	0	0
EES 5 mg/kg	n	12	0	0	0	12	0	0	0
EES 15 mg/kg	n	12	0	0	0	12	0	0	0
EES 50 mg/kg	n	12	0	0	0	12	0	0	0

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 91 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Open field observation Period : F0 before mating

Generation : F0 Sex : Male Week : 2 Species : Rat

Test article / Dose		Gait NC					Posture NC		
		U	0	1	2	3	N	F	H
EES 0 mg/kg	n	0	12	0	0	0	12	0	0
EES 5 mg/kg	n	0	12	0	0	0	12	0	0
EES 15 mg/kg	n	0	12	0	0	0	12	0	0
EES 50 mg/kg	n	0	12	0	0	0	12	0	0

Test article / Dose		Grooming NC			Urination NC			
		0	1	2	0	1	2	3
EES 0 mg/kg	n	12	0	0	12	0	0	0
EES 5 mg/kg	n	12	0	0	11	1	0	0
EES 15 mg/kg	n	12	0	0	11	1	0	0
EES 50 mg/kg	n	12	0	0	12	0	0	0

Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 92 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Open field observation Period : F0 before mating

Generation : F0 Sex : Male Week : 2 Species : Rat

Test article Dose		Rearing	Defecation count
EES 0 mg/kg	n	12	12
	Mean	4	0
	S.D.	3	0
EES 5 mg/kg	n	12	12
	Mean	3	0
	S.D.	2	0
EES 15 mg/kg	n	12	12
	Mean	3	0
	S.D.	2	0
EES 50 mg/kg	n	12	12
	Mean	3	0
	S.D.	2	0

Not significantly different from EES 0 mg/kg

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 93 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Open field observation Period : F0 mating

Generation : F0 Sex : Male Week : 3 Species : Rat

Test article		Arousal NC					Convulsion NC			
Dose		-2	-1	0	1	2	0	1	2	3
EES 0 mg/kg	n	0	0	12	0	0	12	0	0	0
EES 5 mg/kg	n	0	0	12	0	0	12	0	0	0
EES 15 mg/kg	n	0	0	12	0	0	12	0	0	0
EES 50 mg/kg	n	0	0	12	0	0	12	0	0	0

Test article		Abnormal NC behavior				Stereotypy NC			
Dose		0	1	2	3	0	1	2	3
EES 0 mg/kg	n	12	0	0	0	12	0	0	0
EES 5 mg/kg	n	12	0	0	0	12	0	0	0
EES 15 mg/kg	n	12	0	0	0	12	0	0	0
EES 50 mg/kg	n	12	0	0	0	12	0	0	0

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 94 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Open field observation Period : F0 mating

Generation : F0 Sex : Male Week : 3 Species : Rat

Test article / Dose		Gait NC					Posture NC		
		U	0	1	2	3	N	F	H
EES 0 mg/kg	n	0	12	0	0	0	12	0	0
EES 5 mg/kg	n	0	12	0	0	0	12	0	0
EES 15 mg/kg	n	0	12	0	0	0	12	0	0
EES 50 mg/kg	n	0	12	0	0	0	12	0	0

Test article / Dose		Grooming NC			Urination NC			
		0	1	2	0	1	2	3
EES 0 mg/kg	n	12	0	0	11	1	0	0
EES 5 mg/kg	n	12	0	0	11	1	0	0
EES 15 mg/kg	n	12	0	0	11	1	0	0
EES 50 mg/kg	n	12	0	0	12	0	0	0

Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 95 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Open field observation Period : F0 mating

Generation : F0 Sex : Male Week : 3 Species : Rat

Test article Dose		Rearing	Defecation count
EES 0 mg/kg	n	12	12
	Mean	4	0
	S.D.	2	0
EES 5 mg/kg	n	12	12
	Mean	3	0
	S.D.	3	0
EES 15 mg/kg	n	12	12
	Mean	2	0
	S.D.	3	0
EES 50 mg/kg	n	12	12
	Mean	3	0
	S.D.	1	0

Not significantly different from EES 0 mg/kg

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 96 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Open field observation Period : F0 mating

Generation : F0 Sex : Male Week : 4 Species : Rat

Test article / Dose		Arousal NC -2	-1	0	1	2	Convulsion NC 0	1	2	3
EES 0 mg/kg	n	0	0	12	0	0	12	0	0	0
EES 5 mg/kg	n	0	0	12	0	0	12	0	0	0
EES 15 mg/kg	n	0	0	12	0	0	12	0	0	0
EES 50 mg/kg	n	0	0	12	0	0	12	0	0	0

Test article / Dose		Abnormal NC behavior 0	1	2	3	Stereotypy NC 0	1	2	3
EES 0 mg/kg	n	12	0	0	0	12	0	0	0
EES 5 mg/kg	n	12	0	0	0	12	0	0	0
EES 15 mg/kg	n	12	0	0	0	12	0	0	0
EES 50 mg/kg	n	12	0	0	0	12	0	0	0

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 97 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Open field observation Period : F0 mating

Generation : F0 Sex : Male Week : 4 Species : Rat

Test article Dose		Gait NC					Posture NC		
		U	0	1	2	3	N	F	H
EES 0 mg/kg	n	0	12	0	0	0	12	0	0
EES 5 mg/kg	n	0	12	0	0	0	12	0	0
EES 15 mg/kg	n	0	12	0	0	0	12	0	0
EES 50 mg/kg	n	0	12	0	0	0	12	0	0

Test article Dose		Grooming NC			Urination NC			
		0	1	2	0	1	2	3
EES 0 mg/kg	n	12	0	0	11	1	0	0
EES 5 mg/kg	n	12	0	0	12	0	0	0
EES 15 mg/kg	n	12	0	0	10	2	0	0
EES 50 mg/kg	n	12	0	0	10	2	0	0

Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 98 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Open field observation Period : F0 mating

Generation : F0 Sex : Male Week : 4 Species : Rat

Test article Dose		Rearing	Defecation count
EES 0 mg/kg	n	12	12
	Mean	3	0
	S.D.	3	0
EES 5 mg/kg	n	12	12
	Mean	3	0
	S.D.	2	0
EES 15 mg/kg	n	12	12
	Mean	2	0
	S.D.	2	0
EES 50 mg/kg	n	12	12
	Mean	3	0
	S.D.	1	0

Not significantly different from EES 0 mg/kg

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 99 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Open field observation Period : F0 mating

Generation : F0 Sex : Male Week : 5 Species : Rat

Test article / Dose		Arousal NC -2	-1	0	1	2	Convulsion NC 0	1	2	3
EES 0 mg/kg	n	0	0	12	0	0	12	0	0	0
EES 5 mg/kg	n	0	0	12	0	0	12	0	0	0
EES 15 mg/kg	n	0	0	12	0	0	12	0	0	0
EES 50 mg/kg	n	0	0	12	0	0	12	0	0	0

Test article / Dose		Abnormal NC behavior 0	1	2	3	Stereotypy NC 0	1	2	3
EES 0 mg/kg	n	12	0	0	0	12	0	0	0
EES 5 mg/kg	n	12	0	0	0	12	0	0	0
EES 15 mg/kg	n	12	0	0	0	12	0	0	0
EES 50 mg/kg	n	12	0	0	0	12	0	0	0

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 100 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Open field observation Period : F0 mating

Generation : F0 Sex : Male Week : 5 Species : Rat

Test article Dose		Gait NC					Posture NC		
		U	0	1	2	3	N	F	H
EES 0 mg/kg	n	0	12	0	0	0	12	0	0
EES 5 mg/kg	n	0	12	0	0	0	12	0	0
EES 15 mg/kg	n	0	12	0	0	0	12	0	0
EES 50 mg/kg	n	0	12	0	0	0	12	0	0

Test article Dose		Grooming NC			Urination NC			
		0	1	2	0	1	2	3
EES 0 mg/kg	n	12	0	0	12	0	0	0
EES 5 mg/kg	n	12	0	0	10	2	0	0
EES 15 mg/kg	n	12	0	0	10	2	0	0
EES 50 mg/kg	n	12	0	0	12	0	0	0

Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 101 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Open field observation Period : F0 mating

Generation : F0 Sex : Male Week : 5 Species : Rat

Test article Dose		Rearing	Defecation count
EES 0 mg/kg	n	12	12
	Mean	4	0
	S.D.	3	0
EES 5 mg/kg	n	12	12
	Mean	3	0
	S.D.	2	0
EES 15 mg/kg	n	12	12
	Mean	2	0
	S.D.	2	0
EES 50 mg/kg	n	12	12
	Mean	3	0
	S.D.	2	0

Not significantly different from EES 0 mg/kg

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 102 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Open field observation Period : F0 mating

Generation : F0 Sex : Male Week : 6 Species : Rat

Test article		Arousal NC					Convulsion NC			
Dose		-2	-1	0	1	2	0	1	2	3
EES 0 mg/kg	n	0	0	12	0	0	12	0	0	0
EES 5 mg/kg	n	0	0	12	0	0	12	0	0	0
EES 15 mg/kg	n	0	0	12	0	0	12	0	0	0
EES 50 mg/kg	n	0	0	12	0	0	12	0	0	0

Test article		Abnormal NC behavior				Stereotypy NC			
Dose		0	1	2	3	0	1	2	3
EES 0 mg/kg	n	12	0	0	0	12	0	0	0
EES 5 mg/kg	n	12	0	0	0	12	0	0	0
EES 15 mg/kg	n	12	0	0	0	12	0	0	0
EES 50 mg/kg	n	12	0	0	0	12	0	0	0

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 103 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Open field observation Period : F0 mating

Generation : F0 Sex : Male Week : 6 Species : Rat

Test article Dose		Gait NC U	0	1	2	3	Posture NC N	F	H
EES 0 mg/kg	n	0	12	0	0	0	12	0	0
EES 5 mg/kg	n	0	12	0	0	0	12	0	0
EES 15 mg/kg	n	0	12	0	0	0	12	0	0
EES 50 mg/kg	n	0	12	0	0	0	12	0	0

Test article Dose		Grooming NC 0	1	2	Urination NC 0	1	2	3
EES 0 mg/kg	n	12	0	0	8	4	0	0
EES 5 mg/kg	n	12	0	0	6	6	0	0
EES 15 mg/kg	n	12	0	0	5	7	0	0
EES 50 mg/kg	n	12	0	0	10	2	0	0

Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 104 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Open field observation Period : F0 mating

Generation : F0 Sex : Male Week : 6 Species : Rat

Test article Dose		Rearing	Defecation count
EES 0 mg/kg	n	12	12
	Mean	4	0
	S.D.	2	0
EES 5 mg/kg	n	12	12
	Mean	5	0
	S.D.	3	0
EES 15 mg/kg	n	12	12
	Mean	3	0
	S.D.	2	0
EES 50 mg/kg	n	12	12
	Mean	4	0
	S.D.	3	0

Not significantly different from EES 0 mg/kg

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 105 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Open field observation Period : F0 before mating

Generation : F0 Sex : Female Week : 1 Species : Rat

Test article		Arousal NC					Convulsion NC			
Dose		-2	-1	0	1	2	0	1	2	3
EES 0 mg/kg	n	0	0	12	0	0	12	0	0	0
EES 5 mg/kg	n	0	0	12	0	0	12	0	0	0
EES 15 mg/kg	n	0	0	12	0	0	12	0	0	0
EES 50 mg/kg	n	0	0	12	0	0	12	0	0	0

Test article		Abnormal NC behavior				Stereotypy NC			
Dose		0	1	2	3	0	1	2	3
EES 0 mg/kg	n	12	0	0	0	12	0	0	0
EES 5 mg/kg	n	12	0	0	0	12	0	0	0
EES 15 mg/kg	n	12	0	0	0	12	0	0	0
EES 50 mg/kg	n	12	0	0	0	12	0	0	0

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 106 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Open field observation Period : F0 before mating

Generation : F0 Sex : Female Week : 1 Species : Rat

Test article Dose		Gait NC					Posture NC		
		U	0	1	2	3	N	F	H
EES 0 mg/kg	n	0	12	0	0	0	12	0	0
EES 5 mg/kg	n	0	12	0	0	0	12	0	0
EES 15 mg/kg	n	0	12	0	0	0	12	0	0
EES 50 mg/kg	n	0	12	0	0	0	12	0	0

Test article Dose		Grooming NC			Urination NC			
		0	1	2	0	1	2	3
EES 0 mg/kg	n	12	0	0	12	0	0	0
EES 5 mg/kg	n	12	0	0	12	0	0	0
EES 15 mg/kg	n	12	0	0	12	0	0	0
EES 50 mg/kg	n	12	0	0	12	0	0	0

Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 107 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Open field observation Period : F0 before mating

Generation : F0 Sex : Female Week : 1 Species : Rat

Test article Dose		Rearing	Defecation count
EES 0 mg/kg	n	12	12
	Mean	7	0
	S.D.	3	0
EES 5 mg/kg	n	12	12
	Mean	8	0
	S.D.	1	0
EES 15 mg/kg	n	12	12
	Mean	6	0
	S.D.	2	0
EES 50 mg/kg	n	12	12
	Mean	6	0
	S.D.	1	0

Not significantly different from EES 0 mg/kg

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 108 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Open field observation Period : F0 before mating

Generation : F0 Sex : Female Week : 2 Species : Rat

Test article		Arousal NC					Convulsion NC			
Dose		-2	-1	0	1	2	0	1	2	3
EES 0 mg/kg	n	0	0	12	0	0	12	0	0	0
EES 5 mg/kg	n	0	0	12	0	0	12	0	0	0
EES 15 mg/kg	n	0	0	12	0	0	12	0	0	0
EES 50 mg/kg	n	0	0	12	0	0	12	0	0	0

Test article		Abnormal NC behavior				Stereotypy NC			
Dose		0	1	2	3	0	1	2	3
EES 0 mg/kg	n	12	0	0	0	12	0	0	0
EES 5 mg/kg	n	12	0	0	0	12	0	0	0
EES 15 mg/kg	n	12	0	0	0	12	0	0	0
EES 50 mg/kg	n	12	0	0	0	12	0	0	0

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 109 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Open field observation Period : F0 before mating

Generation : F0 Sex : Female Week : 2 Species : Rat

Test article Dose		Gait NC					Posture NC		
		U	0	1	2	3	N	F	H
EES 0 mg/kg	n	0	12	0	0	0	12	0	0
EES 5 mg/kg	n	0	12	0	0	0	12	0	0
EES 15 mg/kg	n	0	12	0	0	0	12	0	0
EES 50 mg/kg	n	0	12	0	0	0	12	0	0

Test article Dose		Grooming NC			Urination NC			
		0	1	2	0	1	2	3
EES 0 mg/kg	n	12	0	0	12	0	0	0
EES 5 mg/kg	n	12	0	0	12	0	0	0
EES 15 mg/kg	n	12	0	0	12	0	0	0
EES 50 mg/kg	n	12	0	0	12	0	0	0

Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 110 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Open field observation Period : F0 before mating

Generation : F0 Sex : Female Week : 2 Species : Rat

Test article Dose		Rearing	Defecation count
EES 0 mg/kg	n	12	12
	Mean	6	0
	S.D.	2	0
EES 5 mg/kg	n	12	12
	Mean	6	0
	S.D.	3	0
EES 15 mg/kg	n	12	12
	Mean	7	0
	S.D.	3	0
EES 50 mg/kg	n	12	12
	Mean	7	0
	S.D.	2	0

Not significantly different from EES 0 mg/kg

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 111 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Open field observation Period : F0 gestation

Generation : F0 Sex : Female Day : 1 Species : Rat

Test article / Dose		Arousal NC -2	-1	0	1	2	Convulsion NC 0	1	2	3
EES 0 mg/kg	n	0	0	11	0	0	11	0	0	0
EES 5 mg/kg	n	0	0	12	0	0	12	0	0	0
EES 15 mg/kg	n	0	0	11	0	0	11	0	0	0
EES 50 mg/kg	n	0	0	11	0	0	11	0	0	0

Test article / Dose		Abnormal NC behavior 0	1	2	3	Stereotypy NC 0	1	2	3
EES 0 mg/kg	n	11	0	0	0	11	0	0	0
EES 5 mg/kg	n	12	0	0	0	12	0	0	0
EES 15 mg/kg	n	11	0	0	0	11	0	0	0
EES 50 mg/kg	n	11	0	0	0	11	0	0	0

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 112 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Open field observation Period : F0 gestation

Generation : F0 Sex : Female Day : 1 Species : Rat

Test article Dose		Gait NC					Posture NC		
		U	0	1	2	3	N	F	H
EES 0 mg/kg	n	0	11	0	0	0	11	0	0
EES 5 mg/kg	n	0	12	0	0	0	12	0	0
EES 15 mg/kg	n	0	11	0	0	0	11	0	0
EES 50 mg/kg	n	0	11	0	0	0	11	0	0

Test article Dose		Grooming NC			Urination NC			
		0	1	2	0	1	2	3
EES 0 mg/kg	n	11	0	0	11	0	0	0
EES 5 mg/kg	n	12	0	0	12	0	0	0
EES 15 mg/kg	n	11	0	0	11	0	0	0
EES 50 mg/kg	n	11	0	0	11	0	0	0

Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 113 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Open field observation Period : F0 gestation

Generation : F0 Sex : Female Day : 1 Species : Rat

Test article Dose		Rearing	Decation count
EES 0 mg/kg	n	11	11
	Mean	6	0
	S.D.	3	0
EES 5 mg/kg	n	12	12
	Mean	6	0
	S.D.	3	0
EES 15 mg/kg	n	11	11
	Mean	5	0
	S.D.	1	0
EES 50 mg/kg	n	11	11
	Mean	6	0
	S.D.	3	0

Not significantly different from EES 0 mg/kg

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 114 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Open field observation Period : F0 gestation

Generation : F0 Sex : Female Day : 7 Species : Rat

Test article		Arousal NC					Convulsion NC			
Dose		-2	-1	0	1	2	0	1	2	3
EES 0 mg/kg	n	0	0	11	0	0	11	0	0	0
EES 5 mg/kg	n	0	0	12	0	0	12	0	0	0
EES 15 mg/kg	n	0	0	11	0	0	11	0	0	0
EES 50 mg/kg	n	0	0	11	0	0	11	0	0	0

Test article		Abnormal NC behavior				Stereotypy NC			
Dose		0	1	2	3	0	1	2	3
EES 0 mg/kg	n	11	0	0	0	11	0	0	0
EES 5 mg/kg	n	12	0	0	0	12	0	0	0
EES 15 mg/kg	n	11	0	0	0	11	0	0	0
EES 50 mg/kg	n	11	0	0	0	11	0	0	0

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 115 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Open field observation Period : F0 gestation

Generation : F0 Sex : Female Day : 7 Species : Rat

Test article Dose		Gait NC					Posture NC		
		U	0	1	2	3	N	F	H
EES 0 mg/kg	n	0	11	0	0	0	11	0	0
EES 5 mg/kg	n	0	12	0	0	0	12	0	0
EES 15 mg/kg	n	0	11	0	0	0	11	0	0
EES 50 mg/kg	n	0	11	0	0	0	11	0	0

Test article Dose		Grooming NC			Urination NC			
		0	1	2	0	1	2	3
EES 0 mg/kg	n	11	0	0	11	0	0	0
EES 5 mg/kg	n	12	0	0	11	1	0	0
EES 15 mg/kg	n	11	0	0	11	0	0	0
EES 50 mg/kg	n	11	0	0	11	0	0	0

Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 116 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Open field observation Period : F0 gestation

Generation : F0 Sex : Female Day : 7 Species : Rat

Test article Dose		Rearing	Decation count
EES 0 mg/kg	n	11	11
	Mean	6	0
	S.D.	3	0
EES 5 mg/kg	n	12	12
	Mean	7	0
	S.D.	3	0
EES 15 mg/kg	n	11	11
	Mean	6	0
	S.D.	2	0
EES 50 mg/kg	n	11	11
	Mean	5	0
	S.D.	3	0

Not significantly different from EES 0 mg/kg

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 117 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Open field observation Period : F0 gestation

Generation : F0 Sex : Female Day : 14 Species : Rat

Test article		Arousal NC					Convulsion NC			
Dose		-2	-1	0	1	2	0	1	2	3
EES 0 mg/kg	n	0	0	11	0	0	11	0	0	0
EES 5 mg/kg	n	0	0	12	0	0	12	0	0	0
EES 15 mg/kg	n	0	0	11	0	0	11	0	0	0
EES 50 mg/kg	n	0	0	11	0	0	11	0	0	0

Test article		Abnormal NC behavior				Stereotypy NC			
Dose		0	1	2	3	0	1	2	3
EES 0 mg/kg	n	11	0	0	0	11	0	0	0
EES 5 mg/kg	n	12	0	0	0	12	0	0	0
EES 15 mg/kg	n	11	0	0	0	11	0	0	0
EES 50 mg/kg	n	11	0	0	0	11	0	0	0

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 118 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Open field observation Period : F0 gestation

Generation : F0 Sex : Female Day : 14 Species : Rat

Test article Dose		Gait NC					Posture NC		
		U	0	1	2	3	N	F	H
EES 0 mg/kg	n	0	11	0	0	0	11	0	0
EES 5 mg/kg	n	0	12	0	0	0	12	0	0
EES 15 mg/kg	n	0	11	0	0	0	11	0	0
EES 50 mg/kg	n	0	11	0	0	0	11	0	0

Test article Dose		Grooming NC			Urination NC			
		0	1	2	0	1	2	3
EES 0 mg/kg	n	11	0	0	11	0	0	0
EES 5 mg/kg	n	12	0	0	12	0	0	0
EES 15 mg/kg	n	11	0	0	11	0	0	0
EES 50 mg/kg	n	11	0	0	11	0	0	0

Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 119 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Open field observation Period : F0 gestation

Generation : F0 Sex : Female Day : 14 Species : Rat

Test article Dose		Rearing	Decation count
EES 0 mg/kg	n	11	11
	Mean	5	0
	S.D.	2	0
EES 5 mg/kg	n	12	12
	Mean	5	0
	S.D.	2	0
EES 15 mg/kg	n	11	11
	Mean	5	0
	S.D.	2	0
EES 50 mg/kg	n	11	11
	Mean	5	0
	S.D.	2	0

Not significantly different from EES 0 mg/kg

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 120 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Open field observation Period : F0 gestation

Generation : F0 Sex : Female Day : 20 Species : Rat

Test article		Arousal NC					Convulsion NC			
Dose		-2	-1	0	1	2	0	1	2	3
EES 0 mg/kg	n	0	0	11	0	0	11	0	0	0
EES 5 mg/kg	n	0	0	12	0	0	12	0	0	0
EES 15 mg/kg	n	0	0	11	0	0	11	0	0	0
EES 50 mg/kg	n	0	0	11	0	0	11	0	0	0

Test article		Abnormal NC behavior				Stereotypy NC			
Dose		0	1	2	3	0	1	2	3
EES 0 mg/kg	n	11	0	0	0	11	0	0	0
EES 5 mg/kg	n	12	0	0	0	12	0	0	0
EES 15 mg/kg	n	11	0	0	0	11	0	0	0
EES 50 mg/kg	n	11	0	0	0	11	0	0	0

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 121 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Open field observation Period : F0 gestation

Generation : F0 Sex : Female Day : 20 Species : Rat

Test article Dose		Gait NC					Posture NC		
		U	0	1	2	3	N	F	H
EES 0 mg/kg	n	0	11	0	0	0	11	0	0
EES 5 mg/kg	n	0	12	0	0	0	12	0	0
EES 15 mg/kg	n	0	11	0	0	0	11	0	0
EES 50 mg/kg	n	0	11	0	0	0	11	0	0

Test article Dose		Grooming NC			Urination NC			
		0	1	2	0	1	2	3
EES 0 mg/kg	n	11	0	0	11	0	0	0
EES 5 mg/kg	n	12	0	0	12	0	0	0
EES 15 mg/kg	n	11	0	0	11	0	0	0
EES 50 mg/kg	n	11	0	0	11	0	0	0

Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 122 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Open field observation Period : F0 gestation

Generation : F0 Sex : Female Day : 20 Species : Rat

Test article Dose		Rearing	Decation count
EES 0 mg/kg	n	11	11
	Mean	4	0
	S.D.	1	0
EES 5 mg/kg	n	12	12
	Mean	4	0
	S.D.	2	0
EES 15 mg/kg	n	11	11
	Mean	3	0
	S.D.	2	0
EES 50 mg/kg	n	11	11
	Mean	3	0
	S.D.	2	0

Not significantly different from EES 0 mg/kg

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 123 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Open field observation Period : F0 lactation

Generation : F0 Sex : Female Day : 6 Species : Rat

Test article / Dose		Arousal NC -2	-1	0	1	2	Convulsion NC 0	1	2	3
EES 0 mg/kg	n	0	0	11	0	0	11	0	0	0
EES 5 mg/kg	n	0	0	12	0	0	12	0	0	0
EES 15 mg/kg	n	0	0	10	0	0	10	0	0	0
EES 50 mg/kg	n	0	0	11	0	0	11	0	0	0

Test article / Dose		Abnormal NC behavior 0	1	2	3	Stereotypy NC 0	1	2	3
EES 0 mg/kg	n	11	0	0	0	11	0	0	0
EES 5 mg/kg	n	12	0	0	0	12	0	0	0
EES 15 mg/kg	n	10	0	0	0	10	0	0	0
EES 50 mg/kg	n	11	0	0	0	11	0	0	0

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 124 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Open field observation Period : F0 lactation

Generation : F0 Sex : Female Day : 6 Species : Rat

Test article Dose		Gait NC					Posture NC		
		U	0	1	2	3	N	F	H
EES 0 mg/kg	n	0	11	0	0	0	11	0	0
EES 5 mg/kg	n	0	12	0	0	0	12	0	0
EES 15 mg/kg	n	0	10	0	0	0	10	0	0
EES 50 mg/kg	n	0	11	0	0	0	11	0	0

Test article Dose		Grooming NC			Urination NC			
		0	1	2	0	1	2	3
EES 0 mg/kg	n	11	0	0	11	0	0	0
EES 5 mg/kg	n	12	0	0	12	0	0	0
EES 15 mg/kg	n	10	0	0	10	0	0	0
EES 50 mg/kg	n	11	0	0	11	0	0	0

Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 125 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Open field observation Period : F0 lactation

Generation : F0 Sex : Female Day : 6 Species : Rat

Test article Dose		Rearing	Decation count
EES 0 mg/kg	n	11	11
	Mean	5	0
	S.D.	1	0
EES 5 mg/kg	n	12	12
	Mean	4	0
	S.D.	2	0
EES 15 mg/kg	n	10	10
	Mean	5	0
	S.D.	2	0
EES 50 mg/kg	n	11	11
	Mean	6	0
	S.D.	2	0

Not significantly different from EES 0 mg/kg

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 126 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Open field observation Period : F0 lactation

Generation : F0 Sex : Female Day : 13 Species : Rat

Test article		Arousal NC					Convulsion NC			
Dose		-2	-1	0	1	2	0	1	2	3
EES 0 mg/kg	n	0	0	11	0	0	11	0	0	0
EES 5 mg/kg	n	0	0	12	0	0	12	0	0	0
EES 15 mg/kg	n	0	0	10	0	0	10	0	0	0
EES 50 mg/kg	n	0	0	11	0	0	11	0	0	0

Test article		Abnormal NC behavior				Stereotypy NC			
Dose		0	1	2	3	0	1	2	3
EES 0 mg/kg	n	11	0	0	0	11	0	0	0
EES 5 mg/kg	n	12	0	0	0	12	0	0	0
EES 15 mg/kg	n	10	0	0	0	10	0	0	0
EES 50 mg/kg	n	11	0	0	0	11	0	0	0

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 127 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Open field observation Period : F0 lactation

Generation : F0 Sex : Female Day : 13 Species : Rat

Test article Dose		Gait NC					Posture NC		
		U	0	1	2	3	N	F	H
EES 0 mg/kg	n	0	11	0	0	0	11	0	0
EES 5 mg/kg	n	0	12	0	0	0	12	0	0
EES 15 mg/kg	n	0	10	0	0	0	10	0	0
EES 50 mg/kg	n	0	11	0	0	0	11	0	0

Test article Dose		Grooming NC			Urination NC			
		0	1	2	0	1	2	3
EES 0 mg/kg	n	11	0	0	11	0	0	0
EES 5 mg/kg	n	12	0	0	12	0	0	0
EES 15 mg/kg	n	10	0	0	10	0	0	0
EES 50 mg/kg	n	11	0	0	11	0	0	0

Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 128 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Open field observation Period : F0 lactation

Generation : F0 Sex : Female Day : 13 Species : Rat

Test article Dose		Rearing	Decation count
EES 0 mg/kg	n	11	11
	Mean	6	0
	S.D.	2	0
EES 5 mg/kg	n	12	12
	Mean	6	0
	S.D.	2	0
EES 15 mg/kg	n	10	10
	Mean	6	0
	S.D.	2	0
EES 50 mg/kg	n	11	11
	Mean	6	0
	S.D.	3	0

Not significantly different from EES 0 mg/kg

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 129 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Open field observation Period : Administration (non-mating group)

Generation : F0 Sex : Female Week : 1 Species : Rat

Test article		Arousal NC					Convulsion NC			
Dose		-2	-1	0	1	2	0	1	2	3
EES 0 mg/kg	n	0	0	10	0	0	10	0	0	0
EES 50 mg/kg	n	0	0	10	0	0	10	0	0	0

Test article		Abnormal NC behavior				Stereotypy NC			
Dose		0	1	2	3	0	1	2	3
EES 0 mg/kg	n	10	0	0	0	10	0	0	0
EES 50 mg/kg	n	10	0	0	0	10	0	0	0

Test article		Gait NC					Posture NC		
Dose		U	0	1	2	3	N	F	H
EES 0 mg/kg	n	0	10	0	0	0	10	0	0
EES 50 mg/kg	n	0	10	0	0	0	10	0	0

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 130 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Open field observation Period : Administration (non-mating group)

Generation : F0 Sex : Female Week : 1 Species : Rat

Test article		Grooming NC			Urination NC			
Dose		0	1	2	0	1	2	3
EES 0 mg/kg	n	10	0	0	10	0	0	0
EES 50 mg/kg	n	10	0	0	10	0	0	0

Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 131 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Open field observation Period : Administration (non-mating group)

Generation : F0 Sex : Female Week : 1 Species : Rat

Test article Dose		Rearing	Defecation count
EES	n	10	10
0 mg/kg	Mean	5	0
	S.D.	2	0
EES	n	10	10
50 mg/kg	Mean	6	0
	S.D.	2	0

Not significantly different from EES 0 mg/kg

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 132 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Open field observation Period : Administration (non-mating group)

Generation : F0 Sex : Female Week : 2 Species : Rat

Test article		Arousal NC					Convulsion NC			
Dose		-2	-1	0	1	2	0	1	2	3
EES 0 mg/kg	n	0	0	10	0	0	10	0	0	0
EES 50 mg/kg	n	0	0	10	0	0	10	0	0	0

Test article		Abnormal NC behavior				Stereotypy NC			
Dose		0	1	2	3	0	1	2	3
EES 0 mg/kg	n	10	0	0	0	10	0	0	0
EES 50 mg/kg	n	10	0	0	0	10	0	0	0

Test article		Gait NC					Posture NC		
Dose		U	0	1	2	3	N	F	H
EES 0 mg/kg	n	0	10	0	0	0	10	0	0
EES 50 mg/kg	n	0	10	0	0	0	10	0	0

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 133 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Open field observation Period : Administration (non-mating group)

Generation : F0 Sex : Female Week : 2 Species : Rat

Test article		Grooming NC			Urination NC			
Dose		0	1	2	0	1	2	3
EES 0 mg/kg	n	10	0	0	10	0	0	0
EES 50 mg/kg	n	10	0	0	10	0	0	0

Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 134 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Open field observation Period : Administration (non-mating group)

Generation : F0 Sex : Female Week : 2 Species : Rat

Test article Dose		Rearing	Defecation count
EES	n	10	10
0 mg/kg	Mean	6	0
	S.D.	3	0
EES	n	10	10
50 mg/kg	Mean	6	0
	S.D.	2	0

Not significantly different from EES 0 mg/kg

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 135 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Open field observation Period : Administration (non-mating group)

Generation : F0 Sex : Female Week : 3 Species : Rat

Test article		Arousal NC					Convulsion NC			
Dose		-2	-1	0	1	2	0	1	2	3
EES 0 mg/kg	n	0	0	10	0	0	10	0	0	0
EES 50 mg/kg	n	0	0	10	0	0	10	0	0	0

Test article		Abnormal NC behavior				Stereotypy NC			
Dose		0	1	2	3	0	1	2	3
EES 0 mg/kg	n	10	0	0	0	10	0	0	0
EES 50 mg/kg	n	10	0	0	0	10	0	0	0

Test article		Gait NC					Posture NC		
Dose		U	0	1	2	3	N	F	H
EES 0 mg/kg	n	0	10	0	0	0	10	0	0
EES 50 mg/kg	n	0	10	0	0	0	10	0	0

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 136 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Open field observation Period : Administration (non-mating group)

Generation : F0 Sex : Female Week : 3 Species : Rat

Test article		Grooming NC			Urination NC			
Dose		0	1	2	0	1	2	3
EES 0 mg/kg	n	10	0	0	10	0	0	0
EES 50 mg/kg	n	10	0	0	10	0	0	0

Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 137 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Open field observation Period : Administration (non-mating group)

Generation : F0 Sex : Female Week : 3 Species : Rat

Test article Dose		Rearing	Defecation count
EES	n	10	10
0 mg/kg	Mean	6	0
	S.D.	3	0
EES	n	10	10
50 mg/kg	Mean	7	0
	S.D.	1	0

Not significantly different from EES 0 mg/kg

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 138 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Open field observation Period : Administration (non-mating group)

Generation : F0 Sex : Female Week : 4 Species : Rat

Test article		Arousal NC					Convulsion NC			
Dose		-2	-1	0	1	2	0	1	2	3
EES 0 mg/kg	n	0	0	10	0	0	10	0	0	0
EES 50 mg/kg	n	0	0	10	0	0	10	0	0	0

Test article		Abnormal NC behavior				Stereotypy NC			
Dose		0	1	2	3	0	1	2	3
EES 0 mg/kg	n	10	0	0	0	10	0	0	0
EES 50 mg/kg	n	10	0	0	0	10	0	0	0

Test article		Gait NC					Posture NC		
Dose		U	0	1	2	3	N	F	H
EES 0 mg/kg	n	0	10	0	0	0	10	0	0
EES 50 mg/kg	n	0	10	0	0	0	10	0	0

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 139 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Open field observation Period : Administration (non-mating group)

Generation : F0 Sex : Female Week : 4 Species : Rat

Test article		Grooming NC			Urination NC			
Dose		0	1	2	0	1	2	3
EES 0 mg/kg	n	10	0	0	10	0	0	0
EES 50 mg/kg	n	10	0	0	10	0	0	0

Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 140 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Open field observation Period : Administration (non-mating group)

Generation : F0 Sex : Female Week : 4 Species : Rat

Test article Dose		Rearing	Defecation count
EES 0 mg/kg	n	10	10
	Mean	7	0
	S.D.	3	0
EES 50 mg/kg	n	10	10
	Mean	7	0
	S.D.	3	0

Not significantly different from EES 0 mg/kg

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 141 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Open field observation Period : Administration (non-mating group)

Generation : F0 Sex : Female Week : 5 Species : Rat

Test article		Arousal NC					Convulsion NC			
Dose		-2	-1	0	1	2	0	1	2	3
EES 0 mg/kg	n	0	0	10	0	0	10	0	0	0
EES 50 mg/kg	n	0	0	10	0	0	10	0	0	0

Test article		Abnormal NC behavior				Stereotypy NC			
Dose		0	1	2	3	0	1	2	3
EES 0 mg/kg	n	10	0	0	0	10	0	0	0
EES 50 mg/kg	n	10	0	0	0	10	0	0	0

Test article		Gait NC					Posture NC		
Dose		U	0	1	2	3	N	F	H
EES 0 mg/kg	n	0	10	0	0	0	10	0	0
EES 50 mg/kg	n	0	10	0	0	0	10	0	0

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 142 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Open field observation Period : Administration (non-mating group)

Generation : F0 Sex : Female Week : 5 Species : Rat

Test article		Grooming NC			Urination NC			
Dose		0	1	2	0	1	2	3
EES 0 mg/kg	n	10	0	0	10	0	0	0
EES 50 mg/kg	n	10	0	0	10	0	0	0

Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 143 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Open field observation Period : Administration (non-mating group)

Generation : F0 Sex : Female Week : 5 Species : Rat

Test article Dose		Rearing	Defecation count
EES	n	10	10
0 mg/kg	Mean	6	0
	S.D.	2	0
EES	n	10	10
50 mg/kg	Mean	5	0
	S.D.	2	0

Not significantly different from EES 0 mg/kg

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 144 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Open field observation Period : Administration (non-mating group)

Generation : F0 Sex : Female Week : 6 Species : Rat

Test article		Arousal NC					Convulsion NC			
Dose		-2	-1	0	1	2	0	1	2	3
EES 0 mg/kg	n	0	0	10	0	0	10	0	0	0
EES 50 mg/kg	n	0	0	10	0	0	10	0	0	0

Test article		Abnormal NC behavior				Stereotypy NC			
Dose		0	1	2	3	0	1	2	3
EES 0 mg/kg	n	10	0	0	0	10	0	0	0
EES 50 mg/kg	n	10	0	0	0	10	0	0	0

Test article		Gait NC					Posture NC		
Dose		U	0	1	2	3	N	F	H
EES 0 mg/kg	n	0	10	0	0	0	10	0	0
EES 50 mg/kg	n	0	10	0	0	0	10	0	0

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 145 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Open field observation Period : Administration (non-mating group)

Generation : F0 Sex : Female Week : 6 Species : Rat

Test article		Grooming NC			Urination NC			
Dose		0	1	2	0	1	2	3
EES 0 mg/kg	n	10	0	0	10	0	0	0
EES 50 mg/kg	n	10	0	0	9	1	0	0

Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 146 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Open field observation Period : Administration (non-mating group)

Generation : F0 Sex : Female Week : 6 Species : Rat

Test article Dose		Rearing	Defecation count
EES	n	10	10
0 mg/kg	Mean	8	0
	S.D.	3	0
EES	n	10	10
50 mg/kg	Mean	6	0
	S.D.	2	0

Not significantly different from EES 0 mg/kg

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 147 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Open field observation Period : Recovery

Generation : F0 Sex : Male Week : 1 Species : Rat

Test article		Arousal NC					Convulsion NC			
Dose		-2	-1	0	1	2	0	1	2	3
EES 0 mg/kg	n	0	0	5	0	0	5	0	0	0
EES 50 mg/kg	n	0	0	5	0	0	5	0	0	0

Test article		Abnormal NC behavior				Stereotypy NC			
Dose		0	1	2	3	0	1	2	3
EES 0 mg/kg	n	5	0	0	0	5	0	0	0
EES 50 mg/kg	n	5	0	0	0	5	0	0	0

Test article		Gait NC					Posture NC		
Dose		U	0	1	2	3	N	F	H
EES 0 mg/kg	n	0	5	0	0	0	5	0	0
EES 50 mg/kg	n	0	5	0	0	0	5	0	0

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 148 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Open field observation Period : Recovery

Generation : F0 Sex : Male Week : 1 Species : Rat

Test article		Grooming NC			Urination NC			
Dose		0	1	2	0	1	2	3
EES 0 mg/kg	n	5	0	0	5	0	0	0
EES 50 mg/kg	n	5	0	0	4	1	0	0

Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 149 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Open field observation Period : Recovery

Generation : F0 Sex : Male Week : 1 Species : Rat

Test article Dose		Rearing	Defecation count
EES	n	5	5
0 mg/kg	Mean	5	0
	S.D.	3	0
EES	n	5	5
50 mg/kg	Mean	4	0
	S.D.	1	0

Not significantly different from EES 0 mg/kg

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 150 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Open field observation Period : Recovery

Generation : F0 Sex : Male Week : 2 Species : Rat

Test article		Arousal NC					Convulsion NC			
Dose		-2	-1	0	1	2	0	1	2	3
EES 0 mg/kg	n	0	0	5	0	0	5	0	0	0
EES 50 mg/kg	n	0	0	5	0	0	5	0	0	0

Test article		Abnormal NC behavior				Stereotypy NC			
Dose		0	1	2	3	0	1	2	3
EES 0 mg/kg	n	5	0	0	0	5	0	0	0
EES 50 mg/kg	n	5	0	0	0	5	0	0	0

Test article		Gait NC					Posture NC		
Dose		U	0	1	2	3	N	F	H
EES 0 mg/kg	n	0	5	0	0	0	5	0	0
EES 50 mg/kg	n	0	5	0	0	0	5	0	0

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 151 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Open field observation Period : Recovery

Generation : F0 Sex : Male Week : 2 Species : Rat

Test article		Grooming NC			Urination NC			
Dose		0	1	2	0	1	2	3
EES 0 mg/kg	n	5	0	0	5	0	0	0
EES 50 mg/kg	n	5	0	0	5	0	0	0

Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 152 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Open field observation Period : Recovery

Generation : F0 Sex : Male Week : 2 Species : Rat

Test article Dose		Rearing	Defecation count
EES 0 mg/kg	n	5	5
	Mean	5	0
	S.D.	2	0
EES 50 mg/kg	n	5	5
	Mean	4	0
	S.D.	1	0

Not significantly different from EES 0 mg/kg

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 153 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Open field observation Period : Recovery (non-mating group)

Generation : F0 Sex : Female Week : 1 Species : Rat

Test article		Arousal NC					Convulsion NC			
Dose		-2	-1	0	1	2	0	1	2	3
EES 0 mg/kg	n	0	0	5	0	0	5	0	0	0
EES 50 mg/kg	n	0	0	5	0	0	5	0	0	0

Test article		Abnormal NC behavior				Stereotypy NC			
Dose		0	1	2	3	0	1	2	3
EES 0 mg/kg	n	5	0	0	0	5	0	0	0
EES 50 mg/kg	n	5	0	0	0	5	0	0	0

Test article		Gait NC					Posture NC		
Dose		U	0	1	2	3	N	F	H
EES 0 mg/kg	n	0	5	0	0	0	5	0	0
EES 50 mg/kg	n	0	5	0	0	0	5	0	0

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 154 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Open field observation Period : Recovery (non-mating group)

Generation : F0 Sex : Female Week : 1 Species : Rat

Test article		Grooming NC			Urination NC			
Dose		0	1	2	0	1	2	3
EES 0 mg/kg	n	5	0	0	5	0	0	0
EES 50 mg/kg	n	5	0	0	5	0	0	0

Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 155 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Open field observation Period : Recovery (non-mating group)

Generation : F0 Sex : Female Week : 1 Species : Rat

Test article Dose		Rearing	Defecation count
EES 0 mg/kg	n	5	5
	Mean	9	0
	S.D.	1	0
EES 50 mg/kg	n	5	5
	Mean	9	0
	S.D.	3	0

Not significantly different from EES 0 mg/kg

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 156 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Open field observation Period : Recovery (non-mating group)

Generation : F0 Sex : Female Week : 2 Species : Rat

Test article		Arousal NC					Convulsion NC			
Dose		-2	-1	0	1	2	0	1	2	3
EES 0 mg/kg	n	0	0	5	0	0	5	0	0	0
EES 50 mg/kg	n	0	0	5	0	0	5	0	0	0

Test article		Abnormal NC behavior				Stereotypy NC			
Dose		0	1	2	3	0	1	2	3
EES 0 mg/kg	n	5	0	0	0	5	0	0	0
EES 50 mg/kg	n	5	0	0	0	5	0	0	0

Test article		Gait NC					Posture NC		
Dose		U	0	1	2	3	N	F	H
EES 0 mg/kg	n	0	5	0	0	0	5	0	0
EES 50 mg/kg	n	0	5	0	0	0	5	0	0

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 157 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Open field observation Period : Recovery (non-mating group)

Generation : F0 Sex : Female Week : 2 Species : Rat

Test article		Grooming NC			Urination NC			
Dose		0	1	2	0	1	2	3
EES 0 mg/kg	n	5	0	0	5	0	0	0
EES 50 mg/kg	n	5	0	0	5	0	0	0

Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
Not calculated : NC
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 158 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Open field observation Period : Recovery (non-mating group)

Generation : F0 Sex : Female Week : 2 Species : Rat

Test article Dose		Rearing	Defecation count
EES 0 mg/kg	n	5	5
	Mean	9	0
	S.D.	3	0
EES 50 mg/kg	n	5	5
	Mean	7	0
	S.D.	2	0

Not significantly different from EES 0 mg/kg

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 159 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Manipulative test Period : F0 mating

Generation : F0 Sex : Male Week : 6 Species : Rat

Test article		Auditory response				Approach response			Touch response		
Dose		-2	-1	0	1	-1	0	1	-1	0	1
EES 0 mg/kg	n	0	0	5	0	0	5	0	0	5	0
EES 5 mg/kg	n	0	0	5	0	0	5	0	0	5	0
EES 15 mg/kg	n	0	0	5	0	0	5	0	0	5	0
EES 50 mg/kg	n	0	0	5	0	0	5	0	0	5	0

Test article		Tail pinch response				Pupillary reflex			
Dose		-2	-1	0	1	P	F	L	R
EES 0 mg/kg	n	0	0	5	0	5	0	0	0
EES 5 mg/kg	n	0	0	5	0	5	0	0	0
EES 15 mg/kg	n	0	0	5	0	5	0	0	0
EES 50 mg/kg	n	0	0	5	0	5	0	0	0

Test article		Aerial righting reflex-total						
Dose		0	1	2	3	4	5	6
EES 0 mg/kg	n	5	0	0	0	0	0	0
EES 5 mg/kg	n	5	0	0	0	0	0	0
EES 15 mg/kg	n	5	0	0	0	0	0	0
EES 50 mg/kg	n	5	0	0	0	0	0	0

Auditory response) -2: None, -1: Weak, 0: Normal, 1: Exaggerate
Approach response) -1: No reaction/ignores, 0: Normal, 1: Abnormality fearful/aggressive reaction
Touch response) -1: No reaction/ignores, 0: Normal, 1: Abnormality fearful/aggressive reaction
Tail pinch response) -2: None, -1: Weak, 0: Normal, 1: Exaggerate
Pupillary reflex) P: Pass, both, F: Failed, neither, L: Left pupil responds, R: Right pupil responds
Aerial righting reflex-total) Total score of 3 times
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 160 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Manipulative test Period : F0 lactation

Generation : F0 Sex : Female Day : 13 Species : Rat

Test article		Auditory response				Approach response			Touch response		
Dose		-2	-1	0	1	-1	0	1	-1	0	1
EES 0 mg/kg	n	0	0	5	0	0	5	0	0	5	0
EES 5 mg/kg	n	0	0	5	0	0	5	0	0	5	0
EES 15 mg/kg	n	0	0	5	0	0	5	0	0	5	0
EES 50 mg/kg	n	0	0	5	0	0	5	0	0	5	0

Test article		Tail pinch response				Pupillary reflex			
Dose		-2	-1	0	1	P	F	L	R
EES 0 mg/kg	n	0	0	5	0	5	0	0	0
EES 5 mg/kg	n	0	0	5	0	5	0	0	0
EES 15 mg/kg	n	0	0	5	0	5	0	0	0
EES 50 mg/kg	n	0	0	5	0	5	0	0	0

Test article		Aerial right-ing reflex-total						
Dose		0	1	2	3	4	5	6
EES 0 mg/kg	n	5	0	0	0	0	0	0
EES 5 mg/kg	n	5	0	0	0	0	0	0
EES 15 mg/kg	n	5	0	0	0	0	0	0
EES 50 mg/kg	n	5	0	0	0	0	0	0

Auditory response) -2: None, -1: Weak, 0: Normal, 1: Exaggerate
Approach response) -1: No reaction/ignores, 0: Normal, 1: Abnormality fearful/aggressive reaction
Touch response) -1: No reaction/ignores, 0: Normal, 1: Abnormality fearful/aggressive reaction
Tail pinch response) -2: None, -1: Weak, 0: Normal, 1: Exaggerate
Pupillary reflex) P: Pass, both, F: Failed, neither, L: Left pupil responds, R: Right pupil responds
Aerial righting reflex-total) Total score of 3 times
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 161 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Manipulative test Period : Administration (non-mating group)

Generation : F0 Sex : Female Week : 6 Species : Rat

Test article		Auditory response				Approach response			Touch response		
Dose		-2	-1	0	1	-1	0	1	-1	0	1
EES 0 mg/kg	n	0	0	5	0	0	5	0	0	5	0
EES 50 mg/kg	n	0	0	5	0	0	5	0	0	5	0

Test article		Tail pinch response				Pupillary reflex			
Dose		-2	-1	0	1	P	F	L	R
EES 0 mg/kg	n	0	0	5	0	5	0	0	0
EES 50 mg/kg	n	0	0	5	0	5	0	0	0

Test article		Aerial righting reflex-total						
Dose		0	1	2	3	4	5	6
EES 0 mg/kg	n	5	0	0	0	0	0	0
EES 50 mg/kg	n	5	0	0	0	0	0	0

Auditory response) -2: None, -1: Weak, 0: Normal, 1: Exaggerate
Approach response) -1: No reaction/ignores, 0: Normal, 1: Abnormality fearful/aggressive reaction
Touch response) -1: No reaction/ignores, 0: Normal, 1: Abnormality fearful/aggressive reaction
Tail pinch response) -2: None, -1: Weak, 0: Normal, 1: Exaggerate
Pupillary reflex) P: Pass, both, F: Failed, neither, L: Left pupil responds, R: Right pupil responds
Aerial righting reflex-total) Total score of 3 times
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 162 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Manipulative test Period : Recovery

Generation : F0 Sex : Male Week : 2 Species : Rat

Test article		Auditory response				Approach response			Touch response		
Dose		-2	-1	0	1	-1	0	1	-1	0	1
EES 0 mg/kg	n	0	0	5	0	0	5	0	0	5	0
EES 50 mg/kg	n	0	0	5	0	0	5	0	0	5	0

Test article		Tail pinch response				Pupillary reflex			
Dose		-2	-1	0	1	P	F	L	R
EES 0 mg/kg	n	0	0	5	0	5	0	0	0
EES 50 mg/kg	n	0	0	5	0	5	0	0	0

Test article		Aerial righting reflex-total						
Dose		0	1	2	3	4	5	6
EES 0 mg/kg	n	5	0	0	0	0	0	0
EES 50 mg/kg	n	5	0	0	0	0	0	0

Auditory response) -2: None, -1: Weak, 0: Normal, 1: Exaggerate
Approach response) -1: No reaction/ignores, 0: Normal, 1: Abnormality fearful/aggressive reaction
Touch response) -1: No reaction/ignores, 0: Normal, 1: Abnormality fearful/aggressive reaction
Tail pinch response) -2: None, -1: Weak, 0: Normal, 1: Exaggerate
Pupillary reflex) P: Pass, both, F: Failed, neither, L: Left pupil responds, R: Right pupil responds
Aerial righting reflex-total) Total score of 3 times
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 163 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Manipulative test Period : Recovery (non-mating group)

Generation : F0 Sex : Female Week : 2 Species : Rat

Test article		Auditory response				Approach response			Touch response		
Dose		-2	-1	0	1	-1	0	1	-1	0	1
EES 0 mg/kg	n	0	0	5	0	0	5	0	0	5	0
EES 50 mg/kg	n	0	0	5	0	0	5	0	0	5	0

Test article		Tail pinch response				Pupillary reflex			
Dose		-2	-1	0	1	P	F	L	R
EES 0 mg/kg	n	0	0	5	0	5	0	0	0
EES 50 mg/kg	n	0	0	5	0	5	0	0	0

Test article		Aerial righting reflex-total						
Dose		0	1	2	3	4	5	6
EES 0 mg/kg	n	5	0	0	0	0	0	0
EES 50 mg/kg	n	5	0	0	0	0	0	0

Auditory response) -2: None, -1: Weak, 0: Normal, 1: Exaggerate
Approach response) -1: No reaction/ignores, 0: Normal, 1: Abnormality fearful/aggressive reaction
Touch response) -1: No reaction/ignores, 0: Normal, 1: Abnormality fearful/aggressive reaction
Tail pinch response) -2: None, -1: Weak, 0: Normal, 1: Exaggerate
Pupillary reflex) P: Pass, both, F: Failed, neither, L: Left pupil responds, R: Right pupil responds
Aerial righting reflex-total) Total score of 3 times
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 164 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Grip strength Period : F0 mating

Generation : F0 Sex : Male Week : 6 Species : Rat

Test article Dose		Grip strength of fore limb g	Grip strength of hind limb g
EES	n	5	5
0 mg/kg	Mean	1367	716
	S.D.	176	173
EES	n	5	5
5 mg/kg	Mean	1444	694
	S.D.	157	188
EES	n	5	5
15 mg/kg	Mean	1403	719
	S.D.	225	98
EES	n	5	5
50 mg/kg	Mean	1483	652
	S.D.	170	156

Not significantly different from EES 0 mg/kg

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 165 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Grip strength Period : F0 lactation

Generation : F0 Sex : Female Day : 13 Species : Rat

Test article Dose		Grip strength of fore limb g	Grip strength of hind limb g
EES 0 mg/kg	n	5	5
	Mean	1240	669
	S.D.	64	215
EES 5 mg/kg	n	5	5
	Mean	1316	742
	S.D.	154	134
EES 15 mg/kg	n	5	5
	Mean	1222	710
	S.D.	201	151
EES 50 mg/kg	n	5	5
	Mean	1305	526
	S.D.	71	183

Not significantly different from EES 0 mg/kg

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 166 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Grip strength Period : Administration (non-mating group)

Generation : F0 Sex : Female Week : 6 Species : Rat

Test article Dose		Grip strength of fore limb g	Grip strength of hind limb g
EES	n	5	5
0 mg/kg	Mean	1031	491
	S.D.	179	153
EES	n	5	5
50 mg/kg	Mean	1086	689
	S.D.	59	155

Not significantly different from EES 0 mg/kg

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 167 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Grip strength Period : Recovery

Generation : F0 Sex : Male Week : 2 Species : Rat

Test article Dose		Grip strength of fore limb g	Grip strength of hind limb g
EES	n	5	5
0 mg/kg	Mean	1681	796
	S.D.	223	181
EES	n	5	5
50 mg/kg	Mean	1600	755
	S.D.	302	213

Not significantly different from EES 0 mg/kg

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 168 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Grip strength Period : Recovery (non-mating group)

Generation : F0 Sex : Female Week : 2 Species : Rat

Test article Dose		Grip strength of fore limb g	Grip strength of hind limb g
EES	n	5	5
0 mg/kg	Mean	1301	638
	S.D.	251	219
EES	n	5	5
50 mg/kg	Mean	1269	678
	S.D.	195	281

Not significantly different from EES 0 mg/kg

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 169 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Motor activity Period : F0 mating

Generation : F0 Sex : Male Week : 6 Species : Rat

Test article Dose		0'-10' Count	10'-20' Count	20'-30' Count	30'-40' Count	40'-50' Count	50'-60' Count	Total(0'-60') Count
EES	n	5	5	5	5	5	5	5
0 mg/kg	Mean	284	283	276	270	158	71	1342
	S.D.	102	156	79	143	115	104	285
EES	n	5	5	5	5	5	5	5
5 mg/kg	Mean	241	260	162	241	147	102	1153
	S.D.	133	155	161	73	166	127	309
EES	n	5	5	5	5	5	5	5
15 mg/kg	Mean	326	269	199	195	178	29	1196
	S.D.	54	70	88	99	95	49	361
EES	n	5	5	5	5	5	5	5
50 mg/kg	Mean	199	266	124	262	189	85	1124
	S.D.	154	77	110	114	113	110	527

Not significantly different from EES 0 mg/kg

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 170 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Motor activity Period : F0 lactation

Generation : F0 Sex : Female Day : 13 Species : Rat

Test article Dose		0'-10' Count	10'-20' Count	20'-30' Count	30'-40' Count	40'-50' Count	50'-60' Count	Total(0'-60') Count
EES	n	5	5	5	5	5	5	5
0 mg/kg	Mean	341	237	143	134	106	113	1074
	S.D.	67	77	94	124	139	132	524
EES	n	5	5	5	5	5	5	5
5 mg/kg	Mean	209	83	44	43	76	19	475
	S.D.	137	61	36	62	78	30	249
			DT *					
EES	n	5	5	5	5	5	5	5
15 mg/kg	Mean	302	189	103	84	105	113	897
	S.D.	48	56	82	69	68	86	130
EES	n	5	5	5	5	5	5	5
50 mg/kg	Mean	284	170	177	134	191	148	1103
	S.D.	151	101	141	113	174	105	712

Significantly different from EES 0 mg/kg : * P<0.05
DT : Dunnett test (two-side)
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 171 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Motor activity Period : Administration (non-mating group)

Generation : F0 Sex : Female Week : 6 Species : Rat

Test article Dose		0'-10' Count	10'-20' Count	20'-30' Count	30'-40' Count	40'-50' Count	50'-60' Count	Total(0'-60') Count
EES	n	5	5	5	5	5	5	5
0 mg/kg	Mean	391	299	190	219	226	93	1416
	S.D.	65	46	134	39	68	76	185
EES	n	5	5	5	5	5	5	5
50 mg/kg	Mean	362	277	205	233	136	62	1276
	S.D.	49	81	109	71	119	107	448

Not significantly different from EES 0 mg/kg

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 172 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Motor activity Period : Recovery

Generation : F0 Sex : Male Week : 2 Species : Rat

Test article Dose		0'-10' Count	10'-20' Count	20'-30' Count	30'-40' Count	40'-50' Count	50'-60' Count	Total(0'-60') Count
EES	n	5	5	5	5	5	5	5
0 mg/kg	Mean	408	317	306	279	285	287	1881
	S.D.	69	117	69	78	97	90	379
EES	n	5	5	5	5	5	5	5
50 mg/kg	Mean	415	327	299	279	264	218	1801
	S.D.	42	80	64	100	108	98	415

Not significantly different from EES 0 mg/kg

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 2 - 173 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Motor activity Period : Recovery (non-mating group)

Generation : F0 Sex : Female Week : 2 Species : Rat

Test article Dose		0'-10' Count	10'-20' Count	20'-30' Count	30'-40' Count	40'-50' Count	50'-60' Count	Total(0'-60') Count
EES	n	5	5	5	5	5	5	5
0 mg/kg	Mean	382	270	244	237	171	135	1439
	S.D.	59	61	74	89	70	83	313
EES	n	5	5	5	5	5	5	5
50 mg/kg	Mean	394	251	214	238	106	90	1292
	S.D.	36	142	64	89	75	89	277

Not significantly different from EES 0 mg/kg

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 3 - 1 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Body weight Period : F0 before mating Day 1-15, F0 mating Day 15-43

Sex : Male Unit : g Species : Rat

Test article Dose	/Day	1	8	15	22	29	36	42	Body weight gain
EES	n	12	12	12	12	12	12	12	12
0 mg/kg	Mean	411	444	470	492	515	536	544	133
	S.D.	20	23	26	28	29	31	30	14
EES	n	12	12	12	12	12	12	12	12
5 mg/kg	Mean	408	435	463	480	502	526	536	128
	S.D.	20	21	21	23	24	25	26	20
EES	n	12	12	12	12	12	12	12	12
15 mg/kg	Mean	411	442	469	489	512	538	548	137
	S.D.	19	20	22	23	25	28	32	21
EES	n	12	12	12	12	12	12	12	12
50 mg/kg	Mean	409	434	459	478	500	523	533	123
	S.D.	16	20	24	25	28	32	32	18

Not significantly different from EES 0 mg/kg

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 3 - 2 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Body weight Period : F0 before mating Day 1-15

Sex : Female Unit : g Species : Rat

Test article		/Day			Body weight
Dose		1	8	15	gain
EES	n	12	12	12	12
0 mg/kg	Mean	249	263	274	26
	S.D.	15	17	19	9
EES	n	12	12	12	12
5 mg/kg	Mean	252	263	279	27
	S.D.	12	14	16	7
EES	n	12	12	12	12
15 mg/kg	Mean	252	261	272	20
	S.D.	12	13	14	9
EES	n	12	12	12	12
50 mg/kg	Mean	247	262	271	24
	S.D.	11	13	9	6

Not significantly different from EES 0 mg/kg

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 3 - 3 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Body weight Period : F0 gestation Day 0-25

Sex : Female Unit : g Species : Rat

Test article		/Day				Body weight
Dose		0	7	14	20	gain
EES	n	11	11	11	11	11
0 mg/kg	Mean	276	316	359	445	169
	S.D.	19	24	29	37	26
EES	n	12	12	12	12	12
5 mg/kg	Mean	285	330	370	465	180
	S.D.	18	17	17	27	16
EES	n	11	11	11	11	11
15 mg/kg	Mean	282	326	368	450	168
	S.D.	19	26	34	47	31
EES	n	11	11	11	11	11
50 mg/kg	Mean	277	318	362	449	172
	S.D.	10	15	20	25	21

Not significantly different from EES 0 mg/kg

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 3 - 4 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Body weight Period : F0 lactation Day 0-14

Sex : Female Unit : g Species : Rat

Test article		/Day				Body weight
Dose		0	4	7	13	gain
EES	n	11	11	11	11	11
0 mg/kg	Mean	344	350	351	373	28
	S.D.	24	26	20	22	15
EES	n	12	12	12	12	12
5 mg/kg	Mean	350	362	366	385	35
	S.D.	24	14	15	17	17
EES	n	10	10	10	10	10
15 mg/kg	Mean	365	366	370	387	21
	S.D.	34	31	34	29	14
EES	n	11	11	11	11	11
50 mg/kg	Mean	345	349	357	376	31
	S.D.	32	21	19	25	16

Not significantly different from EES 0 mg/kg

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 3 - 5 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Body weight Period : Administration Day 1-43 (non-mating group)

Sex : Female Unit : g Species : Rat

Test article		/Day							Body weight
Dose		1	8	15	22	29	36	42	gain
EES	n	10	10	10	10	10	10	10	10
0 mg/kg	Mean	250	262	272	285	293	299	306	56
	S.D.	11	10	12	17	16	16	17	15
EES	n	10	10	10	10	10	10	10	10
50 mg/kg	Mean	248	263	276	290	302	310	314	66
	S.D.	13	11	17	21	26	25	27	21

Not significantly different from EES 0 mg/kg

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 3 - 6 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Body weight Period : Recovery Day 1-15

Sex : Male Unit : g Species : Rat

Test article		/Day			Body weight
Dose		1	8	14	gain
EES	n	5	5	5	5
0 mg/kg	Mean	549	570	577	28
	S.D.	30	36	35	8
EES	n	5	5	5	5
50 mg/kg	Mean	519	538	549	30
	S.D.	37	37	37	6

Not significantly different from EES 0 mg/kg

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 3 - 7 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Body weight Period : Recovery Day 1-15 (non-mating group)

Sex : Female Unit : g Species : Rat

Test article		/Day			Body weight
Dose		1	8	14	gain
EES	n	5	5	5	5
0 mg/kg	Mean	305	312	316	11
	S.D.	11	14	13	4
EES	n	5	5	5	5
50 mg/kg	Mean	314	317	323	9
	S.D.	25	25	25	10

Not significantly different from EES 0 mg/kg

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 4 - 1 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Food consumption Period : F0 before mating Day 1-15

Sex : Male Unit : g Species : Rat

Test article Dose		/Day 2	8	15	Total food consumption
EES 0 mg/kg	n	12	12	12	12
	Mean	26	27	27	80
	S.D.	3	2	2	5
EES 5 mg/kg	n	12	12	12	12
	Mean	27	25	27	79
	S.D.	2	2	2	4
EES 15 mg/kg	n	12	12	12	12
	Mean	27	27	27	82
	S.D.	2	2	3	6
EES 50 mg/kg	n	12	12	12	12
	Mean	22	25	26	73
	S.D.	3	2	3	7
		DT **	DT *		DT **

Significantly different from EES 0 mg/kg : * P<0.05, ** P<0.01

DT : Dunnett test (two-side)

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 4 - 2 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Food consumption Period : F0 mating Day 15-43

Sex : Male Unit : g Species : Rat

Test article		/Day		
Dose		30	36	42
EES	n	12	12	12
0 mg/kg	Mean	25	27	25
	S.D.	3	2	2
EES	n	12	12	12
5 mg/kg	Mean	25	27	26
	S.D.	3	3	3
EES	n	12	12	12
15 mg/kg	Mean	25	29	26
	S.D.	3	3	3
EES	n	12	12	12
50 mg/kg	Mean	24	27	25
	S.D.	3	3	2

Not significantly different from EES 0 mg/kg

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 4 - 3 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Food consumption Period : F0 before mating Day 1-15

Sex : Female Unit : g Species : Rat

Test article Dose		/Day 2	8	15	Total food consumption
EES 0 mg/kg	n	12	12	12	12
	Mean	18	19	21	57
	S.D.	3	2	3	7
EES 5 mg/kg	n	12	12	12	12
	Mean	19	18	20	57
	S.D.	2	3	3	6
EES 15 mg/kg	n	12	12	12	12
	Mean	17	18	19	54
	S.D.	2	3	3	6
EES 50 mg/kg	n	12	12	12	12
	Mean	15	19	20	53
	S.D.	3	2	2	3
		DT *			

Significantly different from EES 0 mg/kg : * P<0.05

DT : Dunnett test (two-side)

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 4 - 4 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Food consumption Period : F0 gestation Day 0-25

Sex : Female Unit : g Species : Rat

Test article		/Day				Total food
Dose		1	7	14	20	consumption
EES	n	11	11	11	11	11
0 mg/kg	Mean	20	24	24	28	97
	S.D.	4	4	4	3	12
EES	n	12	12	12	12	12
5 mg/kg	Mean	20	25	25	28	98
	S.D.	2	2	2	4	8
EES	n	11	11	11	11	11
15 mg/kg	Mean	20	24	26	30	100
	S.D.	4	4	5	4	15
EES	n	11	11	11	11	11
50 mg/kg	Mean	20	23	24	26	94
	S.D.	3	3	4	3	11

Not significantly different from EES 0 mg/kg

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 4 - 5 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Food consumption Period : F0 lactation Day 0-14

Sex : Female Unit : g Species : Rat

Test article		/Day				Total food
Dose		2	4	7	13	consumption
EES	n	11	11	11	11	11
0 mg/kg	Mean	28	44	43	63	179
	S.D.	6	8	5	7	22
EES	n	12	12	12	12	12
5 mg/kg	Mean	33	45	46	68	192
	S.D.	6	7	5	5	16
EES	n	10	10	10	10	10
15 mg/kg	Mean	28	43	46	65	183
	S.D.	6	5	5	6	16
EES	n	11	11	11	11	11
50 mg/kg	Mean	28	43	47	63	180
	S.D.	8	7	5	6	19

Not significantly different from EES 0 mg/kg

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 4 - 6 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Food consumption Period : Administration Day 1-15(non-mating group)

Sex : Female Unit : g Species : Rat

Test article Dose		/Day 2	8	15	Total food consumption
EES 0 mg/kg	n	10	10	10	10
	Mean	19	18	19	56
	S.D.	2	2	2	5
EES 50 mg/kg	n	10	10	10	10
	Mean	17	18	19	54
	S.D.	2	2	4	6

Not significantly different from EES 0 mg/kg

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 4 - 7 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Food consumption Period : Administration Day 15-43(non-mating group)

Sex : Female Unit : g Species : Rat

Test article		/Day		
Dose		30	36	42
EES	n	10	10	10
0 mg/kg	Mean	18	18	19
	S.D.	2	2	3
EES	n	10	10	10
50 mg/kg	Mean	18	21	18
	S.D.	2	4	2

Not significantly different from EES 0 mg/kg

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 4 - 8 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Food consumption Period : Recovery Day 1-15

Sex : Male Unit : g Species : Rat

Test article		/Day			Total food
Dose		2	8	14	consumption
EES	n	5	5	5	5
0 mg/kg	Mean	28	28	29	86
	S.D.	2	3	2	4
EES	n	5	5	5	5
50 mg/kg	Mean	28	27	27	81
	S.D.	3	2	3	8

Not significantly different from EES 0 mg/kg

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 4 - 9 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Food consumption Period : Recovery Day 1-15 (non-mating group)

Sex : Female Unit : g Species : Rat

Test article		/Day			Total food
Dose		2	8	14	consumption
EES	n	5	5	5	5
0 mg/kg	Mean	19	19	19	57
	S.D.	1	3	2	4
EES	n	5	5	5	5
50 mg/kg	Mean	19	18	18	54
	S.D.	3	3	4	6

Not significantly different from EES 0 mg/kg

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 5 - 1 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Urinalysis Stage : Week 6 of administration

Sex : Male Species : Rat

Test article / Dose		pH								
		5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	>=9.0
EES 0 mg/kg	n	0	0	0	0	0	0	0	1	4
EES 5 mg/kg	n	0	0	0	0	0	1	1	1	2
EES 15 mg/kg	n	0	0	0	0	0	0	2	3	0
EES 50 mg/kg	n	0	0	0	1	0	0	0	1	3

Test article / Dose		Protein					Ketones				
		-	+/-	1+	2+	3+	-	+/-	1+	2+	3+
EES 0 mg/kg	n	1	2	2	0	0	1	2	2	0	0
EES 5 mg/kg	n	0	3	2	0	0	3	2	0	0	0
EES 15 mg/kg	n	0	4	1	0	0	4	1	0	0	0
EES 50 mg/kg	n	0	0	2	2	1	1	0	4	0	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate
Protein) -:Negative , +/-:15 , 1+:30 , 2+:100 , 3+:>=300 mg/dL
Ketones) -:Negative , +/-:5 , 1+:15 , 2+:40 , 3+:80 mg/dL

Table 5 - 2 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Urinalysis Stage : Week 6 of administration

Sex : Male Species : Rat

Test article Dose		Glucose -	1+	2+	3+	4+	Occult Blood -	+/-	1+	2+	3+
EES 0 mg/kg	n	5	0	0	0	0	4	1	0	0	0
EES 5 mg/kg	n	5	0	0	0	0	3	2	0	0	0
EES 15 mg/kg	n	5	0	0	0	0	3	2	0	0	0
EES 50 mg/kg	n	5	0	0	0	0	4	0	1	0	0

Test article Dose		Bilirubin -	1+	2+	3+	Urobilinogen +/-	1+	2+	3+
EES 0 mg/kg	n	5	0	0	0	5	0	0	0
EES 5 mg/kg	n	5	0	0	0	5	0	0	0
EES 15 mg/kg	n	5	0	0	0	5	0	0	0
EES 50 mg/kg	n	3	2	0	0	5	0	0	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate
Glucose) -:Negative , 1+:100 , 2+:250 , 3+:500 , 4+:>=1000 mg/dL
Occult Blood) -:Negative , +/-:0.015 , 1+:0.062 , 2+:0.135 , 3+:0.405 mg/dL
Bilirubin) -:Negative , 1+:0.8 , 2+:1.6 , 3+:3.2 mg/dL
Urobilinogen) +/-:0.1 - 1.0 , 1+:2.0 , 2+:4.0 , 3+:>=8.0 Ehrlich U/dL

Table 5 - 3 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Urinalysis Stage : Week 6 of administration

Sex : Male Species : Rat

Test article Dose		Color									
		LY	Y	DY	BR	RE	RB	WH	BL	CL	OT
EES 0 mg/kg	n	0	5	0	0	0	0	0	0	0	0
EES 5 mg/kg	n	0	5	0	0	0	0	0	0	0	0
EES 15 mg/kg	n	0	5	0	0	0	0	0	0	0	0
EES 50 mg/kg	n	0	5	0	0	0	0	0	0	0	0

Color LY: Light Yellow Y: Yellow DY: Dark Yellow BR: Brown RE: Red RB: Reddish brown WH: White BL: Blue CL: Colorless OT: Other

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 5 - 4 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Urinalysis Stage : Week 6 of administration (non-mating group)

Sex : Female Species : Rat

Test article / Dose		pH								
		5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	>=9.0
EES 0 mg/kg	n	0	0	0	0	1	1	1	1	1
EES 50 mg/kg	n	0	0	0	2	0	0	0	3	0

Test article / Dose		Protein					Ketones				
		-	+/-	1+	2+	3+	-	+/-	1+	2+	3+
EES 0 mg/kg	n	3	2	0	0	0	5	0	0	0	0
EES 50 mg/kg	n	2	1	0	2	0	3	1	1	0	0

Test article / Dose		Glucose					Occult Blood				
		-	1+	2+	3+	4+	-	+/-	1+	2+	3+
EES 0 mg/kg	n	5	0	0	0	0	5	0	0	0	0
EES 50 mg/kg	n	5	0	0	0	0	5	0	0	0	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate
Protein) -:Negative , +/-:15 , 1+:30 , 2+:100 , 3+:>=300 mg/dL
Ketones) -:Negative , +/-:5 , 1+:15 , 2+:40 , 3+:80 mg/dL
Glucose) -:Negative , 1+:100 , 2+:250 , 3+:500 , 4+:>=1000 mg/dL
Occult Blood) -:Negative , +/-:0.015 , 1+:0.062 , 2+:0.135 , 3+:0.405 mg/dL

Table 5 - 5 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Urinalysis Stage : Week 6 of administration (non-mating group)

Sex : Female Species : Rat

Test article Dose		Bilirubin -	Bilirubin 1+	Bilirubin 2+	Bilirubin 3+	Urobilinogen +/-	Urobilinogen 1+	Urobilinogen 2+	Urobilinogen 3+
EES 0 mg/kg	n	5	0	0	0	5	0	0	0
EES 50 mg/kg	n	4	1	0	0	5	0	0	0

Test article Dose		Color LY	Y	DY	BR	RE	RB	WH	BL	CL	OT
EES 0 mg/kg	n	0	5	0	0	0	0	0	0	0	0
EES 50 mg/kg	n	0	5	0	0	0	0	0	0	0	0

Color LY: Light Yellow Y: Yellow DY: Dark Yellow BR: Brown RE: Red RB: Reddish brown WH: White BL: Blue CL: Colorless OT: Other

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Bilirubin) -:Negative , 1+:0.8 , 2+:1.6 , 3+:3.2 mg/dL

Urobilinogen) +/-:0.1 - 1.0 , 1+:2.0 , 2+:4.0 , 3+:>=8.0 Ehrlich U/dL

Table 5 - 6 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Urinalysis Stage : Week 6 of administration

Sex : Male Species : Rat

Test article Dose		RBC -	RBC +/-	RBC 1+	RBC 2+	RBC 3+	WBC -	WBC +/-	WBC 1+	WBC 2+	WBC 3+
EES 0 mg/kg	n	5	0	0	0	0	5	0	0	0	0
EES 5 mg/kg	n	5	0	0	0	0	5	0	0	0	0
EES 15 mg/kg	n	5	0	0	0	0	5	0	0	0	0
EES 50 mg/kg	n	5	0	0	0	0	5	0	0	0	0

Test article Dose		Squamous epithelial cells -	Squamous epithelial cells +/-	Squamous epithelial cells 1+	Squamous epithelial cells 2+	Squamous epithelial cells 3+	Small round epithelial cells -	Small round epithelial cells +/-	Small round epithelial cells 1+	Small round epithelial cells 2+	Small round epithelial cells 3+
EES 0 mg/kg	n	0	5	0	0	0	5	0	0	0	0
EES 5 mg/kg	n	0	5	0	0	0	5	0	0	0	0
EES 15 mg/kg	n	0	5	0	0	0	5	0	0	0	0
EES 50 mg/kg	n	0	5	0	0	0	5	0	0	0	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate
RBC) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe
WBC) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe
Squamous epithelial cells) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe
Small round epithelial cells) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe

Table 5 - 7 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Urinalysis Stage : Week 6 of administration

Sex : Male Species : Rat

Test article / Dose		Cast					Crystal phosphate salts				
		-	+/-	1+	2+	3+	-	+/-	1+	2+	3+
EES 0 mg/kg	n	5	0	0	0	0	5	0	0	0	0
EES 5 mg/kg	n	5	0	0	0	0	5	0	0	0	0
EES 15 mg/kg	n	5	0	0	0	0	5	0	0	0	0
EES 50 mg/kg	n	5	0	0	0	0	5	0	0	0	0

Test article / Dose		Crystal calcium oxalate				
		-	+/-	1+	2+	3+
EES 0 mg/kg	n	5	0	0	0	0
EES 5 mg/kg	n	5	0	0	0	0
EES 15 mg/kg	n	5	0	0	0	0
EES 50 mg/kg	n	5	0	0	0	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate
Cast) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe
Crystal phosphate salts) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe
Crystal calcium oxalate) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe

Table 5 - 8 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Urinalysis Stage : Week 6 of administration (non-mating group)

Sex : Female Species : Rat

Test article / Dose		RBC -	RBC +/-	RBC 1+	RBC 2+	RBC 3+	WBC -	WBC +/-	WBC 1+	WBC 2+	WBC 3+
EES 0 mg/kg	n	5	0	0	0	0	5	0	0	0	0
EES 50 mg/kg	n	5	0	0	0	0	5	0	0	0	0

Test article / Dose		Squamous epithelial cells -	Squamous epithelial cells +/-	Squamous epithelial cells 1+	Squamous epithelial cells 2+	Squamous epithelial cells 3+	Small round epithelial cells -	Small round epithelial cells +/-	Small round epithelial cells 1+	Small round epithelial cells 2+	Small round epithelial cells 3+
EES 0 mg/kg	n	0	5	0	0	0	5	0	0	0	0
EES 50 mg/kg	n	0	5	0	0	0	5	0	0	0	0

Test article / Dose		Cast -	Cast +/-	Cast 1+	Cast 2+	Cast 3+	Crystal phosphate salts -	Crystal phosphate salts +/-	Crystal phosphate salts 1+	Crystal phosphate salts 2+	Crystal phosphate salts 3+
EES 0 mg/kg	n	5	0	0	0	0	5	0	0	0	0
EES 50 mg/kg	n	5	0	0	0	0	5	0	0	0	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate
RBC) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe
WBC) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe
Squamous epithelial cells) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe
Small round epithelial cells) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe
Cast) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe
Crystal phosphate salts) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe

Table 5 - 9 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Urinalysis Stage : Week 6 of administration (non-mating group)

Sex : Female Species : Rat

Test article Dose		Crystal calcium oxalate -	+/-	1+	2+	3+
EES 0 mg/kg	n	5	0	0	0	0
EES 50 mg/kg	n	5	0	0	0	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Crystal calcium oxalate) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe

Table 5 - 10 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Urinalysis Stage : Week 6 of administration

Sex : Male Species : Rat

Test article Dose		Water consumption mL/24h	Urine volume mL/24h	Osmotic pressure mOsm/kg	U-Na mmol/24h	U-K mmol/24h	U-Cl mmol/24h
EES	n	5	5	5	5	5	5
0 mg/kg	Mean	41	16.7	2114	2.7	5.3	3.8
	S.D.	4	2.4	335	0.6	0.5	0.6
EES	n	5	5	5	5	5	5
5 mg/kg	Mean	48	19.9	1651	2.5	4.9	3.4
	S.D.	7	7.0	221	0.7	1.1	0.9
EES	n	5	5	5	5	5	5
15 mg/kg	Mean	46	19.0	1940	2.8	5.5	3.8
	S.D.	7	3.1	225	0.4	0.5	0.6
EES	n	5	5	5	5	5	5
50 mg/kg	Mean	40	12.6	2190	1.7	3.9	2.8
	S.D.	9	5.1	495	0.7	0.8	0.9
					DT *	DT *	

Significantly different from EES 0 mg/kg : * P<0.05
DT : Dunnett test (two-side)
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 5 - 11 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Urinalysis Stage : Week 6 of administration (non-mating group)

Sex : Female Species : Rat

Test article Dose		Water consumption mL/24h	Urine volume mL/24h	Osmotic pressure mOsm/kg	U-Na mmol/24h	U-K mmol/24h	U-Cl mmol/24h
EES	n	5	5	5	5	5	5
0 mg/kg	Mean	47	13.4	1528	1.4	3.0	1.9
	S.D.	16	3.6	340	0.4	1.0	0.6
EES	n	5	5	5	5	5	5
50 mg/kg	Mean	35	10.0	1821	1.3	2.7	1.8
	S.D.	5	2.8	434	0.6	1.2	0.8

Not significantly different from EES 0 mg/kg

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 5 - 12 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Urinalysis Stage : Week 2 of recovery

Sex : Male Species : Rat

Test article		pH								
Dose		5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	>=9.0
EES 0 mg/kg	n	0	0	0	0	0	0	0	3	2
EES 50 mg/kg	n	0	0	0	0	0	0	0	2	3

Test article		Protein					Ketones				
Dose		-	+/-	1+	2+	3+	-	+/-	1+	2+	3+
EES 0 mg/kg	n	0	0	4	1	0	0	1	4	0	0
EES 50 mg/kg	n	0	1	1	3	0	0	1	2	2	0

Test article		Glucose					Occult Blood				
Dose		-	1+	2+	3+	4+	-	+/-	1+	2+	3+
EES 0 mg/kg	n	5	0	0	0	0	4	1	0	0	0
EES 50 mg/kg	n	4	1	0	0	0	4	1	0	0	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate
Protein) -:Negative , +/-:15 , 1+:30 , 2+:100 , 3+:>=300 mg/dL
Ketones) -:Negative , +/-:5 , 1+:15 , 2+:40 , 3+:80 mg/dL
Glucose) -:Negative , 1+:100 , 2+:250 , 3+:500 , 4+:>=1000 mg/dL
Occult Blood) -:Negative , +/-:0.015 , 1+:0.062 , 2+:0.135 , 3+:0.405 mg/dL

Table 5 - 13 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Urinalysis Stage : Week 2 of recovery

Sex : Male Species : Rat

Test article Dose		Bilirubin -	Bilirubin 1+	Bilirubin 2+	Bilirubin 3+	Urobilinogen +/-	Urobilinogen 1+	Urobilinogen 2+	Urobilinogen 3+
EES 0 mg/kg	n	5	0	0	0	5	0	0	0
EES 50 mg/kg	n	3	2	0	0	5	0	0	0

Test article Dose		Color LY	Y	DY	BR	RE	RB	WH	BL	CL	OT
EES 0 mg/kg	n	0	5	0	0	0	0	0	0	0	0
EES 50 mg/kg	n	0	5	0	0	0	0	0	0	0	0

Color LY: Light Yellow Y: Yellow DY: Dark Yellow BR: Brown RE: Red RB: Reddish brown WH: White BL: Blue CL: Colorless OT: Other
EES: Ethyl ethyldimethyltetradecylammonium sulphate
Bilirubin) -:Negative , 1+:0.8 , 2+:1.6 , 3+:3.2 mg/dL
Urobilinogen) +/-:0.1 - 1.0 , 1+:2.0 , 2+:4.0 , 3+:>=8.0 Ehrlich U/dL

Table 5 - 14 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Urinalysis Stage : Week 2 of recovery (non-mating group)

Sex : Female Species : Rat

Test article		pH								
Dose		5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	>=9.0
EES 0 mg/kg	n	0	0	1	0	1	0	1	1	1
EES 50 mg/kg	n	0	0	0	0	1	1	1	2	0

Test article		Protein					Ketones				
Dose		-	+/-	1+	2+	3+	-	+/-	1+	2+	3+
EES 0 mg/kg	n	4	0	1	0	0	4	1	0	0	0
EES 50 mg/kg	n	4	0	1	0	0	4	1	0	0	0

Test article		Glucose					Occult Blood				
Dose		-	1+	2+	3+	4+	-	+/-	1+	2+	3+
EES 0 mg/kg	n	5	0	0	0	0	5	0	0	0	0
EES 50 mg/kg	n	5	0	0	0	0	5	0	0	0	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate
Protein) -:Negative , +/-:15 , 1+:30 , 2+:100 , 3+:>=300 mg/dL
Ketones) -:Negative , +/-:5 , 1+:15 , 2+:40 , 3+:80 mg/dL
Glucose) -:Negative , 1+:100 , 2+:250 , 3+:500 , 4+:>=1000 mg/dL
Occult Blood) -:Negative , +/-:0.015 , 1+:0.062 , 2+:0.135 , 3+:0.405 mg/dL

Table 5 - 15 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Urinalysis Stage : Week 2 of recovery (non-mating group)

Sex : Female Species : Rat

Test article Dose		Bilirubin -	Bilirubin 1+	Bilirubin 2+	Bilirubin 3+	Urobilinogen +/-	Urobilinogen 1+	Urobilinogen 2+	Urobilinogen 3+
EES 0 mg/kg	n	5	0	0	0	5	0	0	0
EES 50 mg/kg	n	5	0	0	0	5	0	0	0

Test article Dose		Color LY	Y	DY	BR	RE	RB	WH	BL	CL	OT
EES 0 mg/kg	n	0	5	0	0	0	0	0	0	0	0
EES 50 mg/kg	n	0	5	0	0	0	0	0	0	0	0

Color LY: Light Yellow Y: Yellow DY: Dark Yellow BR: Brown RE: Red RB: Reddish brown WH: White BL: Blue CL: Colorless OT: Other

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Bilirubin) -:Negative , 1+:0.8 , 2+:1.6 , 3+:3.2 mg/dL

Urobilinogen) +/-:0.1 - 1.0 , 1+:2.0 , 2+:4.0 , 3+:>=8.0 Ehrlich U/dL

Table 5 - 16 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Urinalysis Stage : Week 2 of recovery

Sex : Male Species : Rat

Test article		RBC					WBC				
Dose		-	+/-	1+	2+	3+	-	+/-	1+	2+	3+
EES 0 mg/kg	n	5	0	0	0	0	5	0	0	0	0
EES 50 mg/kg	n	5	0	0	0	0	5	0	0	0	0

Test article		Squamous epithelial cells					Small round epithelial cells				
Dose		-	+/-	1+	2+	3+	-	+/-	1+	2+	3+
EES 0 mg/kg	n	0	5	0	0	0	5	0	0	0	0
EES 50 mg/kg	n	0	5	0	0	0	5	0	0	0	0

Test article		Cast					Crystal phosphate salt				
Dose		-	+/-	1+	2+	3+	-	+/-	1+	2+	3+
EES 0 mg/kg	n	5	0	0	0	0	2	3	0	0	0
EES 50 mg/kg	n	5	0	0	0	0	5	0	0	0	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate
RBC) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe
WBC) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe
Squamous epithelial cells) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe
Small round epithelial cells) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe
Cast) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe
Crystal phosphate salts) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe

Table 5 - 17 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Urinalysis Stage : Week 2 of recovery

Sex : Male Species : Rat

Test article Dose		Crystal calcium oxalate				
		-	+/-	1+	2+	3+
EES 0 mg/kg	n	5	0	0	0	0
EES 50 mg/kg	n	5	0	0	0	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Crystal calcium oxalate) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe

Table 5 - 18 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Urinalysis Stage : Week 2 of recovery (non-mating group)

Sex : Female Species : Rat

Test article Dose		RBC -	RBC +/-	RBC 1+	RBC 2+	RBC 3+	WBC -	WBC +/-	WBC 1+	WBC 2+	WBC 3+
EES 0 mg/kg	n	5	0	0	0	0	5	0	0	0	0
EES 50 mg/kg	n	5	0	0	0	0	5	0	0	0	0

Test article Dose		Squamous epithelial cells -	Squamous epithelial cells +/-	Squamous epithelial cells 1+	Squamous epithelial cells 2+	Squamous epithelial cells 3+	Small round epithelial cells -	Small round epithelial cells +/-	Small round epithelial cells 1+	Small round epithelial cells 2+	Small round epithelial cells 3+
EES 0 mg/kg	n	0	5	0	0	0	5	0	0	0	0
EES 50 mg/kg	n	0	5	0	0	0	5	0	0	0	0

Test article Dose		Cast -	Cast +/-	Cast 1+	Cast 2+	Cast 3+	Crystal phosphate salt -	Crystal phosphate salt +/-	Crystal phosphate salt 1+	Crystal phosphate salt 2+	Crystal phosphate salt 3+
EES 0 mg/kg	n	5	0	0	0	0	5	0	0	0	0
EES 50 mg/kg	n	5	0	0	0	0	5	0	0	0	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate
RBC) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe
WBC) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe
Squamous epithelial cells) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe
Small round epithelial cells) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe
Cast) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe
Crystal phosphate salts) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe

Table 5 - 19 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Urinalysis Stage : Week 2 of recovery (non-mating group)

Sex : Female Species : Rat

Test article Dose		Crystal calcium oxalate -	+/-	1+	2+	3+
EES 0 mg/kg	n	5	0	0	0	0
EES 50 mg/kg	n	5	0	0	0	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Crystal calcium oxalate) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe

Table 5 - 20 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Urinalysis Stage : Week 2 of recovery

Sex : Male Species : Rat

Test article Dose		Water consumption mL/24h	Urine volume mL/24h	Osmotic pressure mOsm/kg	U-Na mmol/24h	U-K mmol/24h	U-Cl mmol/24h
EES	n	5	5	5	5	5	5
0 mg/kg	Mean	43	14.0	1950	2.1	3.8	2.7
	S.D.	8	5.9	480	0.9	1.4	1.1
EES	n	5	5	5	5	5	5
50 mg/kg	Mean	42	13.0	2170	2.1	4.1	2.8
	S.D.	7	4.9	389	0.5	0.8	0.5

Not significantly different from EES 0 mg/kg

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 5 - 21 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Urinalysis Stage : Week 2 of recovery (non-mating group)

Sex : Female Species : Rat

Test article Dose		Water consumption mL/24h	Urine volume mL/24h	Osmotic pressure mOsm/kg	U-Na mmol/24h	U-K mmol/24h	U-Cl mmol/24h
EES	n	5	5	5	5	5	5
0 mg/kg	Mean	40	13.3	1523	1.6	3.0	2.1
	S.D.	5	2.2	226	0.4	0.6	0.6
EES	n	5	5	5	5	5	5
50 mg/kg	Mean	44	14.0	1512	1.6	2.9	2.1
	S.D.	5	5.2	400	0.5	0.8	0.7

Not significantly different from EES 0 mg/kg

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 6 - 1 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Hematology Stage : End of administration

Sex : Male Species : Rat

Test article Dose		RBC 10^4/μL	HGB g/dL	HCT %	MCV fL	MCH pg	MCHC g/dL	RDW %	#RETIC 10^9/L	PLT 10^4/μL	WBC 10^2/μL
EES	n	5	5	5	5	5	5	5	5	5	5
0 mg/kg	Mean	859	15.1	43.9	51.2	17.6	34.4	13.1	166.8	100.9	66.5
	S.D.	34	0.3	0.9	1.3	0.4	0.2	0.4	14.2	12.4	8.2
EES	n	5	5	5	5	5	5	5	5	5	5
5 mg/kg	Mean	847	15.3	44.3	52.4	18.1	34.5	13.0	167.9	112.5	82.9
	S.D.	42	0.3	0.8	2.4	0.8	0.2	0.5	13.2	5.3	11.0
EES	n	5	5	5	5	5	5	5	5	5	5
15 mg/kg	Mean	860	15.1	43.8	50.9	17.5	34.4	13.0	161.8	105.3	68.3
	S.D.	23	0.5	1.7	1.4	0.4	0.4	0.7	23.2	5.4	18.9
EES	n	5	5	5	5	5	5	5	5	5	5
50 mg/kg	Mean	834	15.2	43.6	52.3	18.3	34.9	13.2	164.9	111.2	85.4
	S.D.	35	0.5	1.5	1.1	0.5	0.4	0.7	27.7	6.9	6.2
							DT *				

Test article Dose		#LYMP 10^2/μL	#NEUT 10^2/μL	#EOS 10^2/μL	#BASO 10^2/μL	#MONO 10^2/μL	#LUC 10^2/μL	PT s	APTT s	FIB mg/dL
EES	n	5	5	5	5	5	5	5	5	5
0 mg/kg	Mean	50.3	12.9	0.8	0.2	1.7	0.6	14.2	17.6	299
	S.D.	5.4	3.4	0.1	0.1	0.9	0.4	1.2	2.9	36
EES	n	5	5	5	5	5	5	5	5	5
5 mg/kg	Mean	61.3	15.8	1.7	0.2	2.6	1.2	14.8	17.7	289
	S.D.	11.1	5.4	0.4	0.1	0.5	0.5	1.0	3.4	17
				DT **						
EES	n	5	5	5	5	5	5	5	5	5
15 mg/kg	Mean	52.7	11.6	1.1	0.2	1.9	0.8	15.3	19.8	297
	S.D.	17.7	1.6	0.3	0.1	0.9	0.4	1.4	1.5	13
EES	n	5	5	5	5	5	5	5	5	5
50 mg/kg	Mean	64.8	16.3	1.3	0.2	1.8	1.0	14.6	17.3	273
	S.D.	9.1	4.2	0.4	0.1	0.5	0.4	0.8	3.2	29

Significantly different from EES 0 mg/kg : * P<0.05, ** P<0.01
DT : Dunnett test (two-side)
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 6 - 2 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Hematology Stage : End of lactation (F0 dams)

Sex : Female Species : Rat

Test article Dose		RBC 10^4/μL	HGB g/dL	HCT %	MCV fL	MCH pg	MCHC g/dL	RDW %	#RETIC 10^9/L	PLT 10^4/μL	WBC 10^2/μL
EES	n	5	5	5	5	5	5	5	5	5	5
0 mg/kg	Mean	762	15.0	43.0	56.5	19.7	34.9	14.5	227.3	118.5	91.5
	S.D.	16	0.3	0.7	1.9	0.5	0.6	0.8	56.8	8.6	18.0
EES	n	5	5	5	5	5	5	5	5	5	5
5 mg/kg	Mean	738	14.4	40.7	55.2	19.5	35.3	13.5	211.7	111.3	95.4
	S.D.	29	0.5	0.9	1.6	0.6	0.6	0.5	35.1	11.0	13.9
EES	n	5	5	5	5	5	5	5	5	5	5
15 mg/kg	Mean	750	14.6	41.8	55.8	19.5	35.0	13.7	187.7	123.2	103.1
	S.D.	36	0.6	2.0	3.0	0.8	0.6	0.8	26.2	15.9	16.4
EES	n	5	5	5	5	5	5	5	5	5	5
50 mg/kg	Mean	731	15.0	43.7	59.7	20.6	34.5	14.6	209.2	115.7	91.8
	S.D.	33	0.6	2.1	1.8	0.5	0.4	1.0	43.5	12.0	17.0

Test article Dose		#LYMP 10^2/μL	#NEUT 10^2/μL	#EOS 10^2/μL	#BASO 10^2/μL	#MONO 10^2/μL	#LUC 10^2/μL	PT s	APTT s	FIB mg/dL
EES	n	5	5	5	5	5	5	5	5	5
0 mg/kg	Mean	47.9	36.2	0.9	0.3	4.5	1.6	14.5	16.9	430
	S.D.	15.1	9.0	0.4	0.1	1.1	0.6	0.8	1.5	100
EES	n	5	5	5	5	5	5	5	5	5
5 mg/kg	Mean	50.4	38.0	0.9	0.4	4.1	1.6	14.2	16.6	476
	S.D.	8.9	6.5	0.3	0.2	2.2	1.1	1.2	1.6	59
EES	n	5	5	5	5	5	5	5	5	5
15 mg/kg	Mean	49.9	45.1	1.3	0.2	4.7	2.0	13.8	15.7	422
	S.D.	11.3	8.8	0.5	0.1	1.6	1.0	2.2	5.4	105
EES	n	5	5	5	5	5	5	5	5	5
50 mg/kg	Mean	43.1	40.3	1.0	0.3	5.6	1.6	15.3	17.7	481
	S.D.	10.2	8.3	0.3	0.1	2.1	0.7	1.1	2.9	106

Not significantly different from EES 0 mg/kg

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 6 - 3 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Hematology Stage : End of administration (non-mating group)

Sex : Female Species : Rat

Test article Dose		RBC 10^4/μL	HGB g/dL	HCT %	MCV fL	MCH pg	MCHC g/dL	RDW %	#RETIC 10^9/L	PLT 10^4/μL	WBC 10^2/μL
EES	n	5	5	5	5	5	5	5	5	5	5
0 mg/kg	Mean	775	14.5	40.8	52.7	18.7	35.5	12.6	168.5	110.3	52.4
	S.D.	16	0.2	0.9	1.1	0.2	0.8	0.6	46.0	9.4	7.3
EES	n	5	5	5	5	5	5	5	5	5	5
50 mg/kg	Mean	786	14.6	41.8	53.2	18.6	34.8	12.7	157.2	118.0	72.5
	S.D.	17	0.1	0.4	1.1	0.5	0.5	0.4	23.9	6.8	20.0

Test article Dose		#LYMP 10^2/μL	#NEUT 10^2/μL	#EOS 10^2/μL	#BASO 10^2/μL	#MONO 10^2/μL	#LUC 10^2/μL	PT s	APTT s	FIB mg/dL
EES	n	5	5	5	5	5	5	5	5	5
0 mg/kg	Mean	41.0	8.4	1.0	0.1	1.3	0.6	14.6	15.1	205
	S.D.	7.8	2.1	0.5	0.1	0.4	0.2	0.7	2.8	22
EES	n	5	5	5	5	5	5	5	5	5
50 mg/kg	Mean	56.1	13.2	0.8	0.2	1.4	0.9	14.5	13.7	211
	S.D.	17.7	6.2	0.1	0.1	0.7	0.6	0.9	1.2	26

Not significantly different from EES 0 mg/kg

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 6 - 4 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Hematology Stage : End of recovery

Sex : Male Species : Rat

Test article Dose		RBC 10^4/μL	HGB g/dL	HCT %	MCV fL	MCH pg	MCHC g/dL	RDW %	#RETIC 10^9/L	PLT 10^4/μL	WBC 10^2/μL
EES	n	5	5	5	5	5	5	5	5	5	5
0 mg/kg	Mean	875	15.2	43.6	49.9	17.3	34.8	12.7	139.4	108.3	82.8
	S.D.	30	0.5	2.1	1.2	0.2	0.8	0.5	39.8	15.0	19.0
EES	n	5	5	5	5	5	5	5	5	5	5
50 mg/kg	Mean	860	15.4	44.6	51.9	18.0	34.6	12.6	131.1	110.8	81.7
	S.D.	56	0.7	2.5	0.9	0.5	0.5	0.5	9.4	10.6	12.2
					T2 *	A2 *					

Test article Dose		#LYMP 10^2/μL	#NEUT 10^2/μL	#EOS 10^2/μL	#BASO 10^2/μL	#MONO 10^2/μL	#LUC 10^2/μL	PT s	APTT s	FIB mg/dL
EES	n	5	5	5	5	5	5	5	5	5
0 mg/kg	Mean	65.0	13.2	1.2	0.2	2.3	0.9	15.6	19.7	302
	S.D.	14.8	3.1	0.5	0.1	0.6	0.7	0.4	2.6	19
EES	n	5	5	5	5	5	5	5	5	5
50 mg/kg	Mean	61.9	15.2	1.1	0.3	2.3	0.9	15.6	20.5	300
	S.D.	8.9	2.9	0.3	0.1	0.7	0.4	0.9	0.9	30

Significantly different from EES 0 mg/kg : * P<0.05
A2 : Welch test (two-side), T2 : Student t-test (two-side)
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 6 - 5 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Hematology Stage : End of recovery (non-mating group)

Sex : Female Species : Rat

Test article Dose		RBC 10^4/μL	HGB g/dL	HCT %	MCV fL	MCH pg	MCHC g/dL	RDW %	#RETIC 10^9/L	PLT 10^4/μL	WBC 10^2/μL
EES	n	5	5	5	5	5	5	5	5	5	5
0 mg/kg	Mean	800	14.9	41.7	52.1	18.7	35.9	11.4	109.4	106.3	73.3
	S.D.	13	0.3	1.2	1.8	0.6	0.5	0.4	15.1	11.7	20.6
EES	n	5	5	5	5	5	5	5	5	5	5
50 mg/kg	Mean	833	15.4	43.4	52.2	18.5	35.4	11.6	115.9	112.8	66.4
	S.D.	43	0.5	1.1	2.2	0.6	0.5	0.5	42.7	7.8	15.2
				T2 *							

Test article Dose		#LYMP 10^2/μL	#NEUT 10^2/μL	#EOS 10^2/μL	#BASO 10^2/μL	#MONO 10^2/μL	#LUC 10^2/μL	PT s	APTT s	FIB mg/dL
EES	n	5	5	5	5	5	5	5	5	5
0 mg/kg	Mean	58.1	11.2	1.2	0.1	1.7	0.9	15.6	16.6	228
	S.D.	18.2	6.1	0.5	0.1	0.6	0.2	1.0	2.2	38
EES	n	5	5	5	5	5	5	5	5	5
50 mg/kg	Mean	52.8	9.6	1.5	0.2	1.8	0.5	15.7	16.6	204
	S.D.	13.7	3.7	0.6	0.1	0.7	0.2	0.5	1.4	18
							T2 **			

Significantly different from EES 0 mg/kg : * P<0.05, ** P<0.01

T2 : Student t-test (two-side)

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 7 - 1 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Blood chemistry Stage : End of administration

Sex : Male Species : Rat

Test article Dose		AST IU/L	ALT IU/L	ALP IU/L	γ-GTP IU/L	T-BA μmol/L	T-CHO mg/dL	TG mg/dL	PL mg/dL	T-BIL mg/dL	GLU mg/dL
EES	n	5	5	5	5	5	5	5	5	5	5
0 mg/kg	Mean	60	35	430	0	18.3	60	51	96	0.1	145
	S.D.	3	5	100	0	13.6	18	36	20	0.0	12
EES	n	5	5	5	5	5	5	5	5	5	5
5 mg/kg	Mean	62	36	387	0	14.5	58	45	93	0.1	160
	S.D.	5	5	167	0	11.1	3	30	7	0.0	6
EES	n	5	5	5	5	5	5	5	5	5	5
15 mg/kg	Mean	62	40	340	0	18.0	65	52	103	0.1	152
	S.D.	7	5	76	0	11.9	14	17	18	0.0	12
EES	n	5	5	5	5	5	5	5	5	5	5
50 mg/kg	Mean	74	57	321	0	38.6	60	43	96	0.1	160
	S.D.	11	12	44	0	28.6	9	6	12	0.0	10
		DT *	DT **								

Test article Dose		BUN mg/dL	CRNN mg/dL	Na mmol/L	K mmol/L	Cl mmol/L	Ca mg/dL	P mg/dL	TP g/dL	ALB g/dL
EES	n	5	5	5	5	5	5	5	5	5
0 mg/kg	Mean	15	0.26	145	3.9	107	10.3	6.1	6.3	3.3
	S.D.	1	0.03	1	0.2	1	0.3	0.4	0.3	0.1
EES	n	5	5	5	5	5	5	5	5	5
5 mg/kg	Mean	17	0.26	144	3.9	107	10.1	5.8	6.0	3.2
	S.D.	4	0.04	2	0.2	1	0.3	0.2	0.3	0.1
EES	n	5	5	5	5	5	5	5	5	5
15 mg/kg	Mean	16	0.29	144	4.0	106	10.1	5.9	6.2	3.3
	S.D.	2	0.01	1	0.3	1	0.3	0.6	0.2	0.1
EES	n	5	5	5	5	5	5	5	5	5
50 mg/kg	Mean	20	0.31	144	3.9	106	10.3	6.1	6.1	3.3
	S.D.	3	0.02	1	0.2	1	0.3	0.3	0.4	0.2
			DT *							

Significantly different from EES 0 mg/kg : * P<0.05, ** P<0.01

DT : Dunnett test (two-side)

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 7 - 2 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Blood chemistry Stage : End of lactation (F0 dams)

Sex : Female Species : Rat

Test article Dose		AST IU/L	ALT IU/L	ALP IU/L	γ-GTP IU/L	T-BA μmol/L	T-CHO mg/dL	TG mg/dL	PL mg/dL	T-BIL mg/dL	GLU mg/dL
EES	n	5	5	5	5	5	5	5	5	5	5
0 mg/kg	Mean	94	75	321	1	32.4	99	97	182	0.1	135
	S.D.	14	16	29	0	26.1	13	35	19	0.0	10
EES	n	5	5	5	5	5	5	5	5	5	5
5 mg/kg	Mean	128	82	407	0	48.2	105	89	190	0.1	132
	S.D.	75	29	158	1	26.7	8	55	9	0.0	14
EES	n	5	5	5	5	5	5	5	5	5	5
15 mg/kg	Mean	100	72	375	0	18.8	95	103	178	0.1	137
	S.D.	16	8	238	1	7.7	7	18	11	0.0	2
EES	n	5	5	5	5	5	5	5	5	5	5
50 mg/kg	Mean	118	91	288	0	36.0	101	111	195	0.1	121
	S.D.	39	12	53	1	17.9	13	26	30	0.0	5

Test article Dose		BUN mg/dL	CRNN mg/dL	Na mmol/L	K mmol/L	Cl mmol/L	Ca mg/dL	P mg/dL	TP g/dL	ALB g/dL
EES	n	5	5	5	5	5	5	5	5	5
0 mg/kg	Mean	30	0.37	140	3.6	102	10.5	8.9	6.5	3.4
	S.D.	2	0.02	2	0.3	3	0.4	1.1	0.3	0.2
EES	n	5	5	5	5	5	5	5	5	5
5 mg/kg	Mean	27	0.36	140	3.5	102	10.8	8.3	6.5	3.4
	S.D.	7	0.06	1	0.1	3	0.7	1.7	0.4	0.2
EES	n	5	5	5	5	5	5	5	5	5
15 mg/kg	Mean	27	0.37	141	3.5	102	10.7	8.4	6.6	3.5
	S.D.	2	0.05	2	0.4	2	0.4	1.4	0.4	0.3
EES	n	5	5	5	5	5	5	5	5	5
50 mg/kg	Mean	29	0.39	140	3.4	102	11.0	9.7	6.5	3.5
	S.D.	11	0.07	1	0.4	2	0.7	1.6	0.6	0.3

Not significantly different from EES 0 mg/kg

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 7 - 3 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Blood chemistry Stage : End of administration (non-mating group)

Sex : Female Species : Rat

Test article Dose		AST IU/L	ALT IU/L	ALP IU/L	γ-GTP IU/L	T-BA μmol/L	T-CHO mg/dL	TG mg/dL	PL mg/dL	T-BIL mg/dL	GLU mg/dL
EES	n	5	5	5	5	5	5	5	5	5	5
0 mg/kg	Mean	64	37	183	0	16.2	67	23	138	0.1	132
	S.D.	9	10	19	0	5.2	10	15	25	0.0	9
EES	n	5	5	5	5	5	5	5	5	5	5
50 mg/kg	Mean	70	45	172	0	19.5	65	21	132	0.1	125
	S.D.	11	3	59	0	4.6	8	8	14	0.0	11

Test article Dose		BUN mg/dL	CRNN mg/dL	Na mmol/L	K mmol/L	Cl mmol/L	Ca mg/dL	P mg/dL	TP g/dL	ALB g/dL
EES	n	5	5	5	5	5	5	5	5	5
0 mg/kg	Mean	16	0.36	143	3.5	109	10.2	3.7	6.9	3.9
	S.D.	2	0.04	1	0.1	2	0.4	0.4	0.4	0.4
EES	n	5	5	5	5	5	5	5	5	5
50 mg/kg	Mean	17	0.38	143	3.4	109	10.2	4.0	6.6	3.8
	S.D.	2	0.04	1	0.2	1	0.3	0.4	0.2	0.2

Not significantly different from EES 0 mg/kg

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 7 - 4 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Blood chemistry Stage : End of recovery

Sex : Male Species : Rat

Test article Dose		AST IU/L	ALT IU/L	ALP IU/L	γ-GTP IU/L	T-BA μmol/L	T-CHO mg/dL	TG mg/dL	PL mg/dL	T-BIL mg/dL	GLU mg/dL
EES	n	5	5	5	5	5	5	5	5	5	5
0 mg/kg	Mean	63	35	335	0	34.7	65	42	99	0.1	136
	S.D.	5	8	74	0	19.3	8	17	11	0.0	10
EES	n	5	5	5	5	5	5	5	5	5	5
50 mg/kg	Mean	56	34	369	0	10.7	63	68	103	0.1	151
	S.D.	5	4	98	0	7.0	10	14	7	0.0	26
						A2 *		T2 *			

Test article Dose		BUN mg/dL	CRNN mg/dL	Na mmol/L	K mmol/L	Cl mmol/L	Ca mg/dL	P mg/dL	TP g/dL	ALB g/dL
EES	n	5	5	5	5	5	5	5	5	5
0 mg/kg	Mean	20	0.28	144	3.7	106	10.5	5.6	6.4	3.2
	S.D.	2	0.05	1	0.3	2	0.3	0.3	0.3	0.1
EES	n	5	5	5	5	5	5	5	5	5
50 mg/kg	Mean	17	0.28	144	3.7	106	10.1	5.5	6.3	3.3
	S.D.	3	0.04	1	0.2	1	0.2	0.3	0.3	0.2

Significantly different from EES 0 mg/kg : * P<0.05

A2 : Welch test (two-side), T2 : Student t-test (two-side)

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 7 - 5 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Blood chemistry Stage : End of recovery (non-mating group)

Sex : Female Species : Rat

Test article Dose		AST IU/L	ALT IU/L	ALP IU/L	γ-GTP IU/L	T-BA μmol/L	T-CHO mg/dL	TG mg/dL	PL mg/dL	T-BIL mg/dL	GLU mg/dL
EES	n	5	5	5	5	5	5	5	5	5	5
0 mg/kg	Mean	56	35	187	0	12.1	72	31	135	0.1	126
	S.D.	7	7	37	0	6.3	9	16	18	0.0	15
EES	n	5	5	5	5	5	5	5	5	5	5
50 mg/kg	Mean	56	28	147	0	14.8	69	35	136	0.1	121
	S.D.	8	4	40	0	7.0	16	15	26	0.0	13

Test article Dose		BUN mg/dL	CRNN mg/dL	Na mmol/L	K mmol/L	Cl mmol/L	Ca mg/dL	P mg/dL	TP g/dL	ALB g/dL
EES	n	5	5	5	5	5	5	5	5	5
0 mg/kg	Mean	19	0.35	142	3.6	107	10.3	4.0	6.7	3.7
	S.D.	2	0.03	1	0.1	1	0.2	0.8	0.2	0.2
EES	n	5	5	5	5	5	5	5	5	5
50 mg/kg	Mean	18	0.37	141	3.6	107	10.3	4.6	6.7	3.8
	S.D.	1	0.03	1	0.1	1	0.2	0.8	0.3	0.2

Not significantly different from EES 0 mg/kg

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 8 - 1 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Organ weight Stage : End of administration

Sex : Male Species : Rat

Test article		Body weight	Brain		Thyroid-RL		Adrenal -RL		Thymus	
			AB	RE	AB	RE	AB	RE	AB	RE
Dose		g	g	g/100g	mg	mg/100g	mg	mg/100g	mg	mg/100g
EES	n	7	7	7	7	7	7	7	7	7
0 mg/kg	Mean	520	2.17	0.42	24.7	4.7	61	12	368	71
	S.D.	30	0.08	0.02	4.0	0.6	5	1	74	14
EES	n	12	12	12	12	12	12	12	12	12
5 mg/kg	Mean	516	2.15	0.42	23.8	4.6	61	12	357	70
	S.D.	25	0.09	0.03	5.3	1.0	9	2	90	20
EES	n	12	12	12	12	12	12	12	12	12
15 mg/kg	Mean	529	2.21	0.42	26.8	5.1	63	12	330	62
	S.D.	32	0.11	0.03	4.9	0.8	9	2	85	15
EES	n	7	7	7	7	7	7	7	7	7
50 mg/kg	Mean	522	2.14	0.41	24.4	4.7	72	14	313	60
	S.D.	22	0.07	0.02	1.5	0.4	11	2	92	18
							DT *	DT *		

Test article		Spleen		Heart		Liver		Kidney-RL		Testis-RL	
		AB	RE	AB	RE	AB	RE	AB	RE	AB	RE
Dose		g	g/100g	g	g/100g	g	g/100g	g	g/100g	g	g/100g
EES	n	7	7	7	7	7	7	7	7	7	7
0 mg/kg	Mean	0.75	0.14	1.51	0.29	13.28	2.55	3.44	0.67	3.49	0.67
	S.D.	0.07	0.01	0.12	0.02	1.37	0.18	0.34	0.06	0.25	0.04
EES	n	12	12	12	12	12	12	12	12	12	12
5 mg/kg	Mean	0.77	0.15	1.55	0.30	12.85	2.49	3.53	0.68	3.43	0.67
	S.D.	0.10	0.02	0.14	0.03	1.06	0.18	0.34	0.05	0.21	0.06
EES	n	12	12	12	12	12	12	12	12	12	12
15 mg/kg	Mean	0.85	0.16	1.53	0.29	13.60	2.57	3.49	0.66	3.38	0.64
	S.D.	0.12	0.03	0.14	0.03	1.35	0.15	0.20	0.04	0.43	0.09
EES	n	7	7	7	7	7	7	7	7	7	7
50 mg/kg	Mean	0.79	0.15	1.51	0.29	13.50	2.59	3.48	0.67	3.56	0.69
	S.D.	0.10	0.02	0.17	0.03	1.12	0.19	0.31	0.05	0.25	0.07

AB : Absolute weight, RE : Relative weight by body weight
Significantly different from EES 0 mg/kg : * P<0.05
DT : Dunnett test (two-side)
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 8 - 2 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Organ weight Stage : End of administration

Sex : Male Species : Rat

Test article		Epididymis-RL		Prostate		Seminal vesicle		LABC		Cowper's gland-RL	
		AB	RE	AB	RE	AB	RE	AB	RE	AB	RE
Dose		mg	mg/100g	g	g/100g	g	g/100g	g	g/100g	mg	mg/100g
EES	n	7	7	7	7	7	7	7	7	7	7
0 mg/kg	Mean	1376	265	1.34	0.26	1.65	0.32	1.58	0.30	127.8	24.5
	S.D.	83	16	0.21	0.05	0.26	0.06	0.19	0.03	20.1	3.6
EES	n	12	12	12	12	12	12	12	12	12	12
5 mg/kg	Mean	1351	262	1.28	0.25	1.66	0.32	1.57	0.30	143.8	27.9
	S.D.	118	22	0.19	0.04	0.34	0.06	0.17	0.03	20.1	4.2
EES	n	11	11	12	12	12	12	12	12	12	12
15 mg/kg	Mean	1383	264	1.46	0.28	1.78	0.34	1.64	0.31	135.9	25.7
	S.D.	115	27	0.20	0.04	0.29	0.06	0.14	0.03	24.9	4.3
EES	n	7	7	7	7	7	7	7	7	7	7
50 mg/kg	Mean	1437	276	1.27	0.24	1.65	0.32	1.57	0.30	136.5	26.2
	S.D.	55	18	0.16	0.03	0.32	0.07	0.12	0.03	14.4	2.5

Test article		Glans penis	
		AB	RE
Dose		mg	mg/100g
EES	n	7	7
0 mg/kg	Mean	108.2	20.8
	S.D.	14.2	2.4
EES	n	12	12
5 mg/kg	Mean	112.6	21.8
	S.D.	13.9	2.5
EES	n	12	12
15 mg/kg	Mean	117.2	22.2
	S.D.	16.5	3.3
EES	n	7	7
50 mg/kg	Mean	105.4	20.3
	S.D.	15.4	3.6

AB : Absolute weight, RE : Relative weight by body weight
LABC: Levator ani and bulbocavernosus muscle
Not significantly different from EES 0 mg/kg
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 8 - 3 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Organ weight Stage : End of lactation (F0 dams)

Sex : Female Species : Rat

Test article Dose		Body weight g	Brain AB g	Brain RE g/100g	Thyroid-RL AB mg	Thyroid-RL RE mg/100g	Adrenal-RL AB mg	Adrenal-RL RE mg/100g	Thymus AB mg	Thymus RE mg/100g
EES	n	11	11	11	11	11	11	11	11	11
0 mg/kg	Mean	339	1.99	0.59	18.1	5.4	79	23	293	87
	S.D.	23	0.06	0.05	2.1	0.8	7	2	99	31
EES	n	12	12	12	12	12	12	12	12	12
5 mg/kg	Mean	352	2.03	0.58	18.5	5.2	79	23	292	83
	S.D.	16	0.07	0.03	2.1	0.5	7	2	71	22
EES	n	10	10	10	10	10	10	10	10	10
15 mg/kg	Mean	353	2.02	0.57	19.5	5.5	83	24	238	67
	S.D.	26	0.11	0.04	3.4	1.0	13	3	64	16
EES	n	11	11	11	11	11	11	11	11	11
50 mg/kg	Mean	343	1.94	0.57	18.8	5.5	78	23	247	72
	S.D.	20	0.07	0.03	4.8	1.3	11	4	65	17

Test article Dose		Spleen AB g	Spleen RE g/100g	Heart AB g	Heart RE g/100g	Liver AB g	Liver RE g/100g	Kidney-RL AB g	Kidney-RL RE g/100g	Ovary-RL AB mg	Ovary-RL RE mg/100g
EES	n	11	11	11	11	11	11	11	11	11	11
0 mg/kg	Mean	0.60	0.18	1.24	0.36	11.84	3.49	2.45	0.72	101.3	30.0
	S.D.	0.07	0.02	0.15	0.04	1.08	0.23	0.17	0.05	7.2	3.0
EES	n	12	12	12	12	12	12	12	12	12	12
5 mg/kg	Mean	0.65	0.18	1.22	0.35	12.58	3.57	2.49	0.71	99.7	28.4
	S.D.	0.06	0.02	0.09	0.02	1.00	0.19	0.19	0.04	7.2	2.2
EES	n	10	10	10	10	10	10	10	10	10	10
15 mg/kg	Mean	0.61	0.17	1.17	0.33	12.21	3.46	2.41	0.68	95.9	27.2
	S.D.	0.11	0.03	0.08	0.01	1.16	0.20	0.22	0.05	10.2	2.7
					DT *						DT *
EES	n	11	11	11	11	11	11	11	11	11	11
50 mg/kg	Mean	0.61	0.18	1.19	0.35	11.69	3.41	2.41	0.70	96.4	28.1
	S.D.	0.08	0.02	0.10	0.03	0.65	0.19	0.19	0.05	6.4	2.1

AB : Absolute weight, RE : Relative weight by body weight
Significantly different from EES 0 mg/kg : * P<0.05
DT : Dunnett test (two-side)
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 8 - 4 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Organ weight Stage : End of lactation (F0 dams)

Sex : Female Species : Rat

Test article Dose		Uterus AB mg	 RE mg/100g
EES	n	11	11
0 mg/kg	Mean	520	153
	S.D.	75	19
EES	n	12	12
5 mg/kg	Mean	556	158
	S.D.	68	19
EES	n	10	10
15 mg/kg	Mean	552	156
	S.D.	153	40
EES	n	11	11
50 mg/kg	Mean	543	158
	S.D.	71	18

AB : Absolute weight, RE : Relative weight by body weight
Not significantly different from EES 0 mg/kg
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 8 - 5 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Organ weight Stage : End of administration (non-mating group)

Sex : Female Species : Rat

Test article		Body weight	Brain		Thyroid-RL		Adrenal-RL		Thymus	
			AB	RE	AB	RE	AB	RE	AB	RE
Dose		g	g	g/100g	mg	mg/100g	mg	mg/100g	mg	mg/100g
EES	n	5	5	5	5	5	5	5	5	5
0 mg/kg	Mean	291	2.01	0.69	17.1	5.9	73	25	284	98
	S.D.	22	0.08	0.06	4.6	1.8	14	5	31	7
EES	n	5	5	5	5	5	5	5	5	5
50 mg/kg	Mean	301	1.97	0.66	17.2	5.8	70	24	337	111
	S.D.	31	0.08	0.05	1.1	0.8	6	5	63	14

Test article		Spleen		Heart		Liver		Kidney-RL		Ovary-RL	
		AB	RE	AB	RE	AB	RE	AB	RE	AB	RE
Dose		g	g/100g	g	g/100g	g	g/100g	g	g/100g	mg	mg/100g
EES	n	5	5	5	5	5	5	5	5	5	5
0 mg/kg	Mean	0.51	0.17	0.92	0.32	7.50	2.57	1.94	0.66	85.7	29.5
	S.D.	0.09	0.02	0.08	0.02	1.20	0.28	0.27	0.04	13.7	5.1
EES	n	5	5	5	5	5	5	5	5	5	5
50 mg/kg	Mean	0.51	0.17	0.99	0.33	7.76	2.58	1.96	0.65	91.3	30.2
	S.D.	0.10	0.02	0.07	0.02	0.83	0.10	0.22	0.03	14.3	2.5

Test article		Uterus	
		AB	RE
Dose		mg	mg/100g
EES	n	5	5
0 mg/kg	Mean	642	221
	S.D.	151	54
EES	n	5	5
50 mg/kg	Mean	615	204
	S.D.	83	25

AB : Absolute weight, RE : Relative weight by body weight
Not significantly different from EES 0 mg/kg
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 8 - 6 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Organ weight Stage : End of recovery

Sex : Male Species : Rat

Test article		Body weight	Brain		Thyroid-RL		Adrenal -RL		Thymus	
			AB	RE	AB	RE	AB	RE	AB	RE
Dose		g	g	g/100g	mg	mg/100g	mg	mg/100g	mg	mg/100g
EES	n	5	5	5	5	5	5	5	5	5
0 mg/kg	Mean	554	2.22	0.40	22.3	4.0	64	12	295	53
	S.D.	33	0.06	0.03	2.7	0.5	14	3	44	8
EES	n	5	5	5	5	5	5	5	5	5
50 mg/kg	Mean	526	2.16	0.41	22.6	4.3	68	13	322	62
	S.D.	38	0.13	0.02	2.6	0.3	13	3	57	13

Test article		Spleen		Heart		Liver		Kidney-RL		Testis-RL	
		AB	RE	AB	RE	AB	RE	AB	RE	AB	RE
Dose		g	g/100g	g	g/100g	g	g/100g	g	g/100g	g	g/100g
EES	n	5	5	5	5	5	5	5	5	5	5
0 mg/kg	Mean	0.81	0.15	1.56	0.28	14.14	2.55	3.77	0.68	3.38	0.61
	S.D.	0.08	0.01	0.07	0.02	1.41	0.20	0.29	0.04	0.29	0.05
EES	n	5	5	5	5	5	5	5	5	5	5
50 mg/kg	Mean	0.76	0.14	1.50	0.28	13.62	2.58	3.45	0.66	3.40	0.65
	S.D.	0.11	0.02	0.17	0.03	1.76	0.19	0.27	0.06	0.23	0.03

Test article		Epididymis-RL		Prostate		Seminal vesicle		LABC		Cowper's gland-RL	
		AB	RE	AB	RE	AB	RE	AB	RE	AB	RE
Dose		mg	mg/100g	g	g/100g	g	g/100g	g	g/100g	mg	mg/100g
EES	n	5	5	5	5	5	5	5	5	5	5
0 mg/kg	Mean	1372	249	1.33	0.24	1.81	0.33	1.66	0.30	127.0	23.0
	S.D.	120	29	0.18	0.04	0.21	0.05	0.09	0.03	17.5	3.2
EES	n	5	5	5	5	5	5	5	5	5	5
50 mg/kg	Mean	1321	252	1.21	0.23	1.66	0.32	1.54	0.30	106.1	20.3
	S.D.	98	19	0.21	0.03	0.08	0.03	0.17	0.04	19.0	4.1

AB : Absolute weight, RE : Relative weight by body weight
LABC: Levator ani and bulbocavernosus muscle
Not significantly different from EES 0 mg/kg
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 8 - 7 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Organ weight Stage : End of recovery

Sex : Male Species : Rat

Test article Dose		Glans penis AB mg	 RE mg/100g
EES 0 mg/kg	n	5	5
	Mean	125.2	22.7
	S.D.	13.8	3.4
EES 50 mg/kg	n	5	5
	Mean	112.3	21.4
	S.D.	15.0	2.1

AB : Absolute weight, RE : Relative weight by body weight

Not significantly different from EES 0 mg/kg

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 8 - 8 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Organ weight Stage : End of recovery (non-mating group)

Sex : Female Species : Rat

Test article		Body weight	Brain		Thyroid-RL		Adrenal -RL		Thymus	
			AB	RE	AB	RE	AB	RE	AB	RE
Dose		g	g	g/100g	mg	mg/100g	mg	mg/100g	mg	mg/100g
EES	n	5	5	5	5	5	5	5	5	5
0 mg/kg	Mean	305	2.00	0.66	15.6	5.1	63	21	266	87
	S.D.	11	0.07	0.04	3.0	0.9	6	2	58	19
EES	n	5	5	5	5	5	5	5	5	5
50 mg/kg	Mean	309	1.98	0.64	16.9	5.5	71	23	312	100
	S.D.	23	0.13	0.05	1.9	0.6	12	3	60	14

Test article		Spleen		Heart		Liver		Kidney-RL		Ovary-RL	
		AB	RE	AB	RE	AB	RE	AB	RE	AB	RE
Dose		g	g/100g	g	g/100g	g	g/100g	g	g/100g	mg	mg/100g
EES	n	5	5	5	5	5	5	5	5	5	5
0 mg/kg	Mean	0.55	0.18	0.94	0.31	7.23	2.37	2.00	0.66	89.7	29.4
	S.D.	0.11	0.03	0.04	0.01	0.67	0.18	0.17	0.04	11.8	3.8
EES	n	5	5	5	5	5	5	5	5	5	5
50 mg/kg	Mean	0.53	0.17	0.98	0.32	7.35	2.37	2.01	0.65	94.2	30.7
	S.D.	0.07	0.02	0.11	0.02	0.84	0.12	0.22	0.06	28.2	9.5

Test article		Uterus	
		AB	RE
Dose		mg	mg/100g
EES	n	5	5
0 mg/kg	Mean	549	180
	S.D.	91	28
EES	n	5	5
50 mg/kg	Mean	627	203
	S.D.	170	50

AB : Absolute weight, RE : Relative weight by body weight
Not significantly different from EES 0 mg/kg
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 9-1 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats
Gross pathological findings (End of administration)

Organs	Sex:	M	M	M	M
	Dose(mg/kg):	0	5	15	50
Findings	Number:	7	12	12	7
Kidney					
Cyst		1	0	0	0
Testis					
Aplasia,unilateral		0	0	1	0

M : Male

Table 9-2 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats
Gross pathological findings (End of administration)

Organs	Sex:	F	F
	Dose(mg/kg):	0	50
Findings	Number:	5	5
Stomach			
Focus,dark red,glandular stomach		1	0

F : Female

Table 9-3 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats
Gross pathological findings (End of administration,Dams)

Organs	Sex:	F	F	F	F
	Dose(mg/kg):	0	5	15	50
Findings	Number:	11	12	10	11
Lung(including bronchus)					
Focus,dark red		0	1	0	0
Stomach					
Focus,dark red,glandular stomach		4	3	1	1

F : Female

Table 9-4 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats
Gross pathological findings (End of recovery)

Organs	Sex:	M	M
	Dose(mg/kg):	0	50
Findings	Number:	5	5
Stomach			
Focus,dark red,glandular stomach		1	0

M : Male

Table 9-5 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats
Gross pathological findings (End of recovery)

Organs	Sex:	F	F
	Dose(mg/kg):	0	50
Findings	Number:	5	5
All tissues			
Not remarkable		5	5

F : Female

Table 9-6 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats
Gross pathological findings (Undelivered)

Organs	Sex:	F	F	F
	Dose(mg/kg):	0	15	50
Findings	Number:	1	2	1
All tissues				
Not remarkable		1	2	1

F : Female

Table 10-1 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats
Histopathological findings (End of administration)

Organs	Sex:	M	M	M	M
	Dose(mg/kg):	0	5	15	50
Findings	Number:	7	12	12	7
Adrenal					
Number examined		5	0	0	5
Not remarkable		5	0	0	5
Bone,femur					
Number examined		5	0	0	5
Not remarkable		5	0	0	5
Bone marrow,femur					
Number examined		5	0	0	5
Not remarkable		5	0	0	5
Cerebellum					
Number examined		5	0	0	5
Not remarkable		5	0	0	5
Coagulating gland					
Number examined		5	0	0	5
Not remarkable		5	0	0	5
Cerebrum					
Number examined		5	0	0	5
Not remarkable		5	0	0	5
Epididymis					
Number examined		5	0	0	5
Not remarkable		5	0	0	5
Eye					
Number examined		5	0	0	5
Not remarkable		5	0	0	5
Heart					
Number examined		5	0	0	5
Not remarkable		3	0	0	2
Cardiomyopathy,rodent progressive		2	0	0	3
minimal		2	0	0	3
Intestine,duodenum					
Number examined		5	0	0	5
Not remarkable		5	0	0	5
Intestine,jejunum					
Number examined		5	0	0	5
Not remarkable		5	0	0	5
Intestine,ileum(including Peyer's patch)					
Number examined		5	0	0	5
Not remarkable		5	0	0	5
Intestine,cecum					
Number examined		5	0	0	5
Not remarkable		5	0	0	5

M : Male

Table 10-2 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats
Histopathological findings (End of administration)

Organs	Sex:	M	M	M	M
	Dose(mg/kg):	0	5	15	50
Findings	Number:	7	12	12	7
Intestine,colon					
Number examined		5	0	0	5
Not remarkable		5	0	0	5
Intestine,rectum					
Number examined		5	0	0	5
Not remarkable		5	0	0	5
Kidney					
Number examined		5	0	0	5
Not remarkable		4	0	0	2
Cyst		1	0	0	0
minimal		1	0	0	0
Basophilia,tubule		1	0	0	2
minimal		1	0	0	2
Cell infiltration,mononuclear		0	0	0	1
minimal		0	0	0	1
Lymph node,mesenteric					
Number examined		5	0	0	5
Not remarkable		5	0	0	5
Lymph node,submandibular					
Number examined		5	0	0	5
Not remarkable		5	0	0	5
Liver					
Number examined		5	0	0	5
Not remarkable		2	0	0	2
Cell infiltration,mononuclear		3	0	0	3
minimal		3	0	0	3
Lung(including bronchus)					
Number examined		5	0	0	5
Not remarkable		4	0	0	4
Mineralization,wall,artery		1	0	0	0
minimal		1	0	0	0
Metaplasia,osseous		0	0	0	1
minimal		0	0	0	1
Mammary gland,inguinal					
Number examined		5	0	0	5
Not remarkable		5	0	0	5
Optic nerve					
Number examined		5	0	0	5
Not remarkable		5	0	0	5
Parathyroid					
Number examined		5	0	0	5
Not remarkable		5	0	0	5
Pancreas					
Number examined		5	0	0	5
Not remarkable		5	0	0	4
Cell infiltration,mononuclear		0	0	0	1
minimal		0	0	0	1

M : Male

Table 10-3 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats
Histopathological findings (End of administration)

Organs	Sex:	M	M	M	M
	Dose(mg/kg):	0	5	15	50
Findings	Number:	7	12	12	7
Pituitary					
Number examined		5	0	0	5
Not remarkable		5	0	0	5
Pons					
Number examined		5	0	0	5
Not remarkable		5	0	0	5
Prostate					
Number examined		5	0	0	5
Not remarkable		1	0	0	1
Cell infiltration,inflammatory		4	0	0	4
minimal		4	0	0	4
Salivary gland,submandibular					
Number examined		5	0	0	5
Not remarkable		5	0	0	5
Skin,inguinal					
Number examined		5	0	0	5
Not remarkable		5	0	0	5
Sciatic nerve					
Number examined		5	0	0	5
Not remarkable		5	0	0	5
Spleen					
Number examined		5	0	0	5
Not remarkable		5	0	0	5
Stomach					
Number examined		5	0	0	5
Not remarkable		5	0	0	5
Skeletal muscle,femoral					
Number examined		5	0	0	5
Not remarkable		5	0	0	5
Seminal vesicle					
Number examined		5	0	0	5
Not remarkable		5	0	0	5
Spinal cord,thoracic					
Number examined		5	0	0	5
Not remarkable		5	0	0	5
Testis					
Number examined		5	0	0	5
Not remarkable		5	0	0	5

M : Male

Table 10-4 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats
Histopathological findings (End of administration)

Organs	Sex:	M	M	M	M
	Dose(mg/kg):	0	5	15	50
Findings	Number:	7	12	12	7
Thymus					
Number examined		5	0	0	5
Not remarkable		5	0	0	5
Trachea					
Number examined		5	0	0	5
Not remarkable		5	0	0	5
Thyroid					
Number examined		5	0	0	5
Not remarkable		5	0	0	5
Urinary bladder					
Number examined		5	0	0	5
Not remarkable		5	0	0	5

M : Male

Table 10-5 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats
Histopathological findings (End of administration)

Organs	Sex:	F	F
	Dose(mg/kg):	0	50
Findings	Number:	5	5
Adrenal			
Number examined		5	5
Not remarkable		5	5
Bone marrow,femur			
Number examined		5	5
Not remarkable		5	5
Bone,femur			
Number examined		5	5
Not remarkable		5	5
Cerebellum			
Number examined		5	5
Not remarkable		5	5
Cerebrum			
Number examined		5	5
Not remarkable		5	5
Eye			
Number examined		5	5
Not remarkable		5	5
Heart			
Number examined		5	5
Not remarkable		5	5
Intestine,duodenum			
Number examined		5	5
Not remarkable		5	5
Intestine,jejunum			
Number examined		5	5
Not remarkable		5	5
Intestine,ileum(including Peyer's patch)			
Number examined		5	5
Not remarkable		5	5
Intestine,cecum			
Number examined		5	5
Not remarkable		5	5
Intestine,colon			
Number examined		5	5
Not remarkable		5	5
Intestine,rectum			
Number examined		5	5
Not remarkable		5	5
Kidney			
Number examined		5	5
Not remarkable		4	4

F : Female

Table 10-6 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats
Histopathological findings (End of administration)

Organs	Sex:	F	F
	Dose(mg/kg):	0	50
Findings	Number:	5	5
Kidney (continued)			
Basophilia,tubule		1	0
minimal		1	0
Cell infiltration,mononuclear		0	1
minimal		0	1
Liver			
Number examined		5	5
Not remarkable		1	2
Cell infiltration,mononuclear		4	3
minimal		4	3
Lung(including bronchus)			
Number examined		5	5
Not remarkable		4	5
Mineralization,wall,artery		1	0
minimal		1	0
Lymph node,mesenteric			
Number examined		5	5
Not remarkable		5	5
Lymph node,submandibular			
Number examined		5	5
Not remarkable		5	5
Mammary gland,inguinal			
Number examined		5	5
Not remarkable		5	5
Optic nerve			
Number examined		5	5
Not remarkable		5	5
Ovary			
Number examined		5	5
Not remarkable		5	5
Pancreas			
Number examined		5	5
Not remarkable		5	4
Cell infiltration,mononuclear		0	1
minimal		0	1
Parathyroid			
Number examined		5	5
Not remarkable		5	5
Pituitary			
Number examined		5	5
Not remarkable		5	5
Pons			
Number examined		5	5
Not remarkable		5	5

F : Female

Table 10-7 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats
Histopathological findings (End of administration)

Organs	Sex:	F	F
	Dose(mg/kg):	0	50
Findings	Number:	5	5
Salivary gland,submandibular			
Number examined		5	5
Not remarkable		5	5
Sciatic nerve			
Number examined		5	5
Not remarkable		5	5
Skeletal muscle,femoral			
Number examined		5	5
Not remarkable		5	5
Skin,inguinal			
Number examined		5	5
Not remarkable		5	5
Spinal cord,thoracic			
Number examined		5	5
Not remarkable		5	5
Spleen			
Number examined		5	5
Not remarkable		5	5
Stomach			
Number examined		5	5
Not remarkable		4	5
Erosion/ulcer,glandular stomach		1	0
minimal		1	0
Thymus			
Number examined		5	5
Not remarkable		5	5
Thyroid			
Number examined		5	5
Not remarkable		5	5
Trachea			
Number examined		5	5
Not remarkable		5	5
Urinary bladder			
Number examined		5	5
Not remarkable		5	5
Uterus			
Number examined		5	5
Not remarkable		5	5
Vagina			
Number examined		5	5
Not remarkable		5	5

F : Female

Table 10-8 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats
Histopathological findings (End of administration,Dams)

Organs	Sex:	F	F	F	F
	Dose(mg/kg):	0	5	15	50
Findings	Number:	11	12	10	11
Adrenal					
Number examined		5	0	0	5
Not remarkable		4	0	0	5
Hypertrophy,cortex,focal		1	0	0	0
minimal		1	0	0	0
Bone marrow,femur					
Number examined		5	0	0	5
Not remarkable		5	0	0	5
Bone,femur					
Number examined		5	0	0	5
Not remarkable		5	0	0	5
Cerebellum					
Number examined		5	0	0	5
Not remarkable		5	0	0	5
Cerebrum					
Number examined		5	0	0	5
Not remarkable		5	0	0	5
Eye					
Number examined		5	0	0	5
Not remarkable		3	0	0	5
Cell infiltration,conjunctiva		1	0	0	0
minimal		1	0	0	0
Retinal rosette		1	0	0	0
minimal		1	0	0	0
Heart					
Number examined		5	0	0	5
Not remarkable		5	0	0	5
Intestine,duodenum					
Number examined		5	0	0	5
Not remarkable		5	0	0	5
Intestine,jejunum					
Number examined		5	0	0	5
Not remarkable		5	0	0	5
Intestine,ileum(including Peyer's patch)					
Number examined		5	0	0	5
Not remarkable		5	0	0	5
Intestine,cecum					
Number examined		5	0	0	5
Not remarkable		5	0	0	5
Intestine,colon					
Number examined		5	0	0	5
Not remarkable		5	0	0	5

F : Female

Table 10-9 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats
Histopathological findings (End of administration,Dams)

Organs / Findings	Sex:	F	F	F	F
	Dose(mg/kg):	0	5	15	50
	Number:	11	12	10	11
Intestine,rectum					
Number examined		5	0	0	5
Not remarkable		5	0	0	5
Kidney					
Number examined		5	0	0	5
Not remarkable		5	0	0	3
Cyst		0	0	0	1
minimal		0	0	0	1
Basophilia,tubule		0	0	0	1
minimal		0	0	0	1
Liver					
Number examined		5	0	0	5
Not remarkable		4	0	0	5
Cell infiltration,mononuclear		1	0	0	0
minimal		1	0	0	0
Lung(including bronchus)					
Number examined		5	0	0	5
Not remarkable		3	0	0	2
Mineralization,wall,artery		2	0	0	0
minimal		2	0	0	0
Hemorrhage,focal		0	0	0	1
minimal		0	0	0	1
Increased macrophage,alveolus		1	0	0	0
minimal		1	0	0	0
Cell infiltration,inflammatory		0	0	0	1
minimal		0	0	0	1
Metaplasia,osseous		0	0	0	1
minimal		0	0	0	1
Lymph node,mesenteric					
Number examined		5	0	0	5
Not remarkable		5	0	0	5
Lymph node,submandibular					
Number examined		5	0	0	5
Not remarkable		5	0	0	5
Mammary gland,inguinal					
Number examined		5	0	0	5
Not remarkable		5	0	0	5
Optic nerve					
Number examined		5	0	0	5
Not remarkable		5	0	0	5
Ovary					
Number examined		5	0	0	5
Not remarkable		5	0	0	5
Pancreas					
Number examined		5	0	0	5
Not remarkable		4	0	0	5
Cell infiltration,mononuclear		1	0	0	0
minimal		1	0	0	0

F : Female

Table 10-10 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats
Histopathological findings (End of administration,Dams)

Organs	Sex:	F	F	F	F
	Dose(mg/kg):	0	5	15	50
Findings	Number:	11	12	10	11
Parathyroid					
Number examined		4	0	0	5
Not remarkable		4	0	0	5
No sample		1	0	0	0
Pituitary					
Number examined		5	0	0	5
Not remarkable		5	0	0	5
Pons					
Number examined		5	0	0	5
Not remarkable		5	0	0	5
Salivary gland,submandibular					
Number examined		5	0	0	5
Not remarkable		5	0	0	5
Sciatic nerve					
Number examined		5	0	0	5
Not remarkable		5	0	0	5
Skeletal muscle,femoral					
Number examined		5	0	0	5
Not remarkable		5	0	0	5
Skin,inguinal					
Number examined		5	0	0	5
Not remarkable		5	0	0	5
Spinal cord,thoracic					
Number examined		5	0	0	5
Not remarkable		5	0	0	5
Spleen					
Number examined		5	0	0	5
Not remarkable		5	0	0	5
Stomach					
Number examined		5	0	0	5
Not remarkable		4	0	0	5
Erosion/ulcer,glandular stomach		1	0	0	0
minimal		1	0	0	0
Thymus					
Number examined		5	0	0	5
Not remarkable		5	0	0	5
Thyroid					
Number examined		5	0	0	5
Not remarkable		5	0	0	5

F : Female

Table 10-11 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats
Histopathological findings (End of administration,Dams)

Organs	Sex:	F	F	F	F
	Dose(mg/kg):	0	5	15	50
Findings	Number:	11	12	10	11
Trachea					
Number examined		5	0	0	5
Not remarkable		5	0	0	5
Urinary bladder					
Number examined		5	0	0	5
Not remarkable		5	0	0	5
Uterus					
Number examined		5	0	0	5
Not remarkable		5	0	0	5
Vagina					
Number examined		5	0	0	5
Not remarkable		5	0	0	5

F : Female

Table 10-12 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats
Histopathological findings (End of recovery)

Organs	Sex:	M	M
	Dose(mg/kg):	0	50
Findings	Number:	5	5
Adrenal			
Number examined		5	5
Not remarkable		5	5
Bone marrow,femur			
Number examined		5	5
Not remarkable		5	5
Bone,femur			
Number examined		5	5
Not remarkable		5	5
Cerebellum			
Number examined		5	5
Not remarkable		5	5
Cerebrum			
Number examined		5	5
Not remarkable		5	5
Coagulating gland			
Number examined		5	5
Not remarkable		5	5
Epididymis			
Number examined		5	5
Not remarkable		4	4
Cell infiltration,mononuclear		1	1
minimal		1	1
Eye			
Number examined		5	5
Not remarkable		5	5
Heart			
Number examined		5	5
Not remarkable		5	3
Cardiomyopathy,rodent progressive		0	2
minimal		0	2
Intestine,duodenum			
Number examined		5	5
Not remarkable		5	5
Intestine,jejunum			
Number examined		5	5
Not remarkable		5	5
Intestine,ileum(including Peyer's patch)			
Number examined		5	5
Not remarkable		5	5
Intestine,cecum			
Number examined		5	5
Not remarkable		5	5

M : Male

Table 10-13 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats
Histopathological findings (End of recovery)

Organs	Sex:	M	M
	Dose(mg/kg):	0	50
Findings	Number:	5	5
Intestine,colon			
Number examined		5	5
Not remarkable		5	5
Intestine,rectum			
Number examined		5	5
Not remarkable		5	5
Kidney			
Number examined		5	5
Not remarkable		1	3
Basophilia,tubule		1	0
minimal		1	0
Cast,hyaline		1	0
minimal		1	0
Cast,erythrocytic		1	0
minimal		1	0
Cell infiltration,mononuclear		1	2
minimal		1	2
Liver			
Number examined		5	5
Not remarkable		2	1
Cell infiltration,mononuclear		3	4
minimal		3	4
Lung(including bronchus)			
Number examined		5	5
Not remarkable		4	4
Cell infiltration,inflammatory		1	1
minimal		1	1
Lymph node,mesenteric			
Number examined		5	5
Not remarkable		5	5
Lymph node,submandibular			
Number examined		5	5
Not remarkable		5	5
Mammary gland,inguinal			
Number examined		5	5
Not remarkable		5	5
Optic nerve			
Number examined		5	5
Not remarkable		5	5
Pancreas			
Number examined		5	5
Not remarkable		5	5
Parathyroid			
Number examined		5	5
Not remarkable		5	5

M : Male

Table 10-14 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats
Histopathological findings (End of recovery)

Organs	Sex:	M	M
	Dose(mg/kg):	0	50
Findings	Number:	5	5
Pituitary			
Number examined		5	5
Not remarkable		5	5
Pons			
Number examined		5	5
Not remarkable		5	5
Prostate			
Number examined		5	5
Cell infiltration,inflammatory		5	5
minimal		5	4
mild		0	1
Salivary gland,submandibular			
Number examined		5	5
Not remarkable		5	5
Sciatic nerve			
Number examined		5	5
Not remarkable		5	5
Seminal vesicle			
Number examined		5	5
Not remarkable		5	5
Skeletal muscle,femoral			
Number examined		5	5
Not remarkable		5	5
Skin,inguinal			
Number examined		5	5
Not remarkable		5	5
Spinal cord,thoracic			
Number examined		5	5
Not remarkable		5	5
Spleen			
Number examined		5	5
Not remarkable		5	5
Stomach			
Number examined		5	5
Not remarkable		4	5
Erosion/ulcer,glandular stomach		1	0
minimal		1	0
Testis			
Number examined		5	5
Not remarkable		5	5
Thymus			
Number examined		5	5
Not remarkable		5	5

M : Male

Table 10-15 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats
Histopathological findings (End of recovery)

Organs	Sex:	M	M
	Dose(mg/kg):	0	50
Findings	Number:	5	5
Thyroid			
Number examined		5	5
Not remarkable		5	5
Trachea			
Number examined		5	5
Not remarkable		5	5
Urinary bladder			
Number examined		5	5
Not remarkable		5	5

M : Male

Table 10-16 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats
Histopathological findings (End of recovery)

Organs	Sex:	F	F
	Dose(mg/kg):	0	50
Findings	Number:	5	5
Adrenal			
Number examined		5	5
Not remarkable		5	5
Bone marrow,femur			
Number examined		5	5
Not remarkable		5	5
Bone,femur			
Number examined		5	5
Not remarkable		5	5
Cerebellum			
Number examined		5	5
Not remarkable		5	5
Cerebrum			
Number examined		5	5
Not remarkable		5	5
Eye			
Number examined		5	5
Not remarkable		4	5
Retinal rosette		1	0
minimal		1	0
Heart			
Number examined		5	5
Not remarkable		5	5
Intestine,duodenum			
Number examined		5	5
Not remarkable		5	5
Intestine,jejunum			
Number examined		5	5
Not remarkable		5	5
Intestine,ileum(including Peyer's patch)			
Number examined		5	5
Not remarkable		5	5
Intestine,cecum			
Number examined		5	5
Not remarkable		5	5
Intestine,colon			
Number examined		5	5
Not remarkable		5	5
Intestine,rectum			
Number examined		5	5
Not remarkable		5	5

F : Female

Table 10-17 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats
Histopathological findings (End of recovery)

Organs	Sex:	F	F
	Dose(mg/kg):	0	50
Findings	Number:	5	5
Kidney			
Number examined		5	5
Not remarkable		4	5
Calculus		1	0
minimal		1	0
Liver			
Number examined		5	5
Not remarkable		4	3
Cell infiltration,mononuclear		1	2
minimal		1	2
Lung(including bronchus)			
Number examined		5	5
Not remarkable		5	5
Lymph node,mesenteric			
Number examined		5	5
Not remarkable		5	5
Lymph node,submandibular			
Number examined		5	5
Not remarkable		5	5
Mammary gland,inguinal			
Number examined		5	5
Not remarkable		5	5
Optic nerve			
Number examined		5	5
Not remarkable		5	5
Ovary			
Number examined		5	5
Not remarkable		5	5
Pancreas			
Number examined		5	5
Not remarkable		5	5
Parathyroid			
Number examined		5	4
Not remarkable		4	4
No sample		0	1
Cell infiltration,mononuclear		1	0
minimal		1	0
Pituitary			
Number examined		5	5
Not remarkable		5	5
Pons			
Number examined		5	5
Not remarkable		5	5

F : Female

Table 10-18 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats
Histopathological findings (End of recovery)

Organs	Sex:	F	F
	Dose(mg/kg):	0	50
Findings	Number:	5	5
Salivary gland,submandibular			
Number examined		5	5
Not remarkable		5	5
Sciatic nerve			
Number examined		5	5
Not remarkable		5	5
Skeletal muscle,femoral			
Number examined		5	5
Not remarkable		5	5
Skin,inguinal			
Number examined		5	5
Not remarkable		5	5
Spinal cord,thoracic			
Number examined		5	5
Not remarkable		5	5
Spleen			
Number examined		5	5
Not remarkable		5	5
Stomach			
Number examined		5	5
Not remarkable		5	5
Thymus			
Number examined		5	5
Not remarkable		5	5
Thyroid			
Number examined		5	5
Not remarkable		5	5
Trachea			
Number examined		5	5
Not remarkable		5	5
Urinary bladder			
Number examined		5	5
Not remarkable		5	5
Uterus			
Number examined		5	5
Not remarkable		5	5
Vagina			
Number examined		5	5
Not remarkable		5	5

F : Female

Table 10-19 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats
Histopathological findings (Undelivered)

Organs	Sex:	F	F	F
	Dose(mg/kg):	0	15	50
Findings	Number:	1	2	1
Adrenal				
Number examined		1	2	1
Not remarkable		1	2	1
Bone marrow,femur				
Number examined		1	2	1
Not remarkable		1	2	1
Bone,femur				
Number examined		1	2	1
Not remarkable		1	2	1
Cerebellum				
Number examined		1	2	1
Not remarkable		1	2	1
Cerebrum				
Number examined		1	2	1
Not remarkable		1	2	1
Eye				
Number examined		1	2	1
Not remarkable		1	2	1
Heart				
Number examined		1	2	1
Not remarkable		1	2	1
Intestine,duodenum				
Number examined		1	2	1
Not remarkable		1	2	1
Intestine,jejunum				
Number examined		1	2	1
Not remarkable		1	2	1
Intestine,ileum(including Peyer's patch)				
Number examined		1	2	1
Not remarkable		1	2	1
Intestine,cecum				
Number examined		1	2	1
Not remarkable		1	2	1
Intestine,colon				
Number examined		1	2	1
Not remarkable		1	2	1
Intestine,rectum				
Number examined		1	2	1
Not remarkable		1	2	1
Kidney				
Number examined		1	2	1
Not remarkable		1	2	1

F : Female

Table 10-20 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats
Histopathological findings (Undelivered)

Organs	Sex:	F	F	F
	Dose(mg/kg):	0	15	50
Findings	Number:	1	2	1
Liver				
Number examined		1	2	1
Not remarkable		0	2	0
Cell infiltration,mononuclear		1	0	1
minimal		1	0	1
Lung(including bronchus)				
Number examined		1	2	1
Not remarkable		1	2	1
Lymph node,mesenteric				
Number examined		1	2	1
Not remarkable		1	2	1
Lymph node,submandibular				
Number examined		1	2	1
Not remarkable		1	2	1
Mammary gland,inguinal				
Number examined		1	2	1
Not remarkable		1	2	1
Optic nerve				
Number examined		1	2	1
Not remarkable		1	2	1
Ovary				
Number examined		1	2	1
Not remarkable		1	2	1
Pancreas				
Number examined		1	2	1
Not remarkable		1	2	1
Parathyroid				
Number examined		1	2	1
Not remarkable		1	2	1
Pituitary				
Number examined		1	2	1
Not remarkable		1	2	1
Pons				
Number examined		1	2	1
Not remarkable		1	2	1
Salivary gland,submandibular				
Number examined		1	2	1
Not remarkable		1	2	1
Sciatic nerve				
Number examined		1	2	1
Not remarkable		1	2	1

F : Female

Table 10-21 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats
Histopathological findings (Undelivered)

Organs	Sex:	F	F	F
	Dose(mg/kg):	0	15	50
Findings	Number:	1	2	1
Skeletal muscle,femoral				
Number examined		1	2	1
Not remarkable		1	2	1
Skin,inguinal				
Number examined		1	2	1
Not remarkable		1	2	1
Spinal cord,thoracic				
Number examined		1	2	1
Not remarkable		1	2	1
Spleen				
Number examined		1	2	1
Not remarkable		1	1	1
Extramedullary hematopoiesis,increased		0	1	0
minimal		0	1	0
Stomach				
Number examined		1	2	1
Not remarkable		1	2	1
Thymus				
Number examined		1	2	1
Not remarkable		1	1	1
Fibrosis,focal		0	1	0
minimal		0	1	0
Thyroid				
Number examined		1	2	1
Not remarkable		1	2	1
Trachea				
Number examined		1	2	1
Not remarkable		1	2	1
Urinary bladder				
Number examined		1	2	1
Not remarkable		1	2	1
Uterus				
Number examined		1	2	1
Not remarkable		1	2	1
Vagina				
Number examined		1	2	1
Not remarkable		1	2	1

F : Female

Table 11 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Study No. : R-1244

Estrus cycles

Generation : F0

Species : Rat

Test article Dose		/Before mating Mean estrous cycle (Days)	Number of estrus	Number of animals with abnormal estrous cycle	Abnormal estrous cycle index (%)
EES 0 mg/kg	n	12	12	12 (0)	0.0
	Mean	4.3	3.6		
	S.D.	0.4	0.5		
EES 5 mg/kg	n	12	12	12 (0)	0.0
	Mean	4.1	3.5		
	S.D.	0.2	0.5		
EES 15 mg/kg	n	12	12	12 (0)	0.0
	Mean	4.0	3.8		
	S.D.	0.1	0.5		
EES 50 mg/kg	n	12	12	12 (0)	0.0
	Mean	4.2	3.7		
	S.D.	0.3	0.5		

() : Values in brackets represent number of animals with abnormal estrous cycle.
Abnormal estrous cycle index = (Number of animals with abnormal estrous cycle / Number of animals examined)x 100
Not significantly different from EES 0 mg/kg
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 12 - 1 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Reproductive performance

Generation : F0 Sex : Male Species : Rat

Test article Dose		Number of pairs	Elapsed day of conceiving	1st mating Copulation index (%) a)	1st mating Fertility index (%) b)
EES	n	12	12	(12/12)	(11/12)
0 mg/kg	Mean		2.8	100.0	91.7
	S.D.		1.4		
EES	n	12	12	(12/12)	(12/12)
5 mg/kg	Mean		2.2	100.0	100.0
	S.D.		1.1		
EES	n	12	11	(11/12)	(11/11)
15 mg/kg	Mean		2.9	91.7	100.0
	S.D.		2.1		
EES	n	12	11	(11/12)	(11/11)
50 mg/kg	Mean		2.5	91.7	100.0
	S.D.		1.1		

Not significantly different from EES 0 mg/kg

EES: Ethyl ethyldimethyltetradecylammonium sulphate

a): (Number of copulated animals / Number of mated animals)x 100

b): (Number of males which impregnated females / Number of copulated males)x 100

Table 12 - 2 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Reproductive performance

Generation : F0 Sex : Female Species : Rat

Test article Dose		Number of pairs	Elapsed day of conceiving	1st mating Copulation index (%) a)	1st mating Fertility index (%) b)
EES	n	12	12	(12/12)	(11/12)
0 mg/kg	Mean		2.8	100.0	91.7
	S.D.		1.4		
EES	n	12	12	(12/12)	(12/12)
5 mg/kg	Mean		2.2	100.0	100.0
	S.D.		1.1		
EES	n	12	11	(11/12)	(11/11)
15 mg/kg	Mean		2.9	91.7	100.0
	S.D.		2.1		
EES	n	12	11	(11/12)	(11/11)
50 mg/kg	Mean		2.5	91.7	100.0
	S.D.		1.1		

Not significantly different from EES 0 mg/kg

EES: Ethyl ethyldimethyltetradecylammonium sulphate

a): (Number of copulated animals / Number of mated animals)x 100

b): (Number of pregnant females / Number of copulated females)x 100

Table 13 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Study No. : R-1244

Delivery data

Generation : F0

Species : Rat

Test article Dose		Gestation period (day)	Gestation index (%) a)	Number of implan-tation	Postimplan-tation loss (%) b)	Delivery index (%) c)	Live birth index (%) d)	Number of offspring	Number of live newborns M	F	Total	Sex retio (%) e)	Number of dead newborns
EES	n	11	11/11	11	11	11	11	11	11	11	11	77/165	11
0 mg/kg	Mean	22.0	100.0	16.0	6.8	93.7	99.5	15.1	7.0	8.0	15.0	46.7	0.1
	S.D.	0.3		2.9	7.2	7.1	1.8	3.2	1.6	3.6	3.1		0.3
EES	n	12	12/12	12	12	12	12	12	12	12	12	91/186	12
5 mg/kg	Mean	22.2	100.0	17.0	9.0	93.9	97.0	16.0	7.6	7.9	15.5	48.9	0.5
	S.D.	0.4		2.2	6.2	6.1	4.8	2.4	2.6	2.9	2.5		0.8
EES	n	10	10/11	10	10	10	10	10	10	10	10	64/146	10
15 mg/kg	Mean	22.0	90.9	16.2	10.3	91.0	98.7	14.8	6.4	8.2	14.6	43.8	0.2
	S.D.	0.4		1.5	7.9	7.9	2.8	2.3	1.3	2.5	2.3		0.4
EES	n	11	11/11	11	11	11	11	11	11	11	11	74/163	11
50 mg/kg	Mean	22.2	100.0	16.0	7.7	94.3	98.0	15.1	6.7	8.1	14.8	45.4	0.3
	S.D.	0.6		1.3	7.7	6.7	4.9	1.7	2.5	2.3	2.1		0.6

M : Male, F : Female
Not significantly different from EES 0 mg/kg
EES: Ethyl ethyldimethyltetradecylammonium sulphate
a): (Number of females delivered live newborns / Number of pregnant females) x 100
b): [(Number of implantation - Number of liveborns) / Number of implantation] x 100
c): (Number of delivered pups / Number of implantation) x 100
d): (Number of liveborns / Number of delivered pups) x 100
e): (Number of live males / Number of liveborns) x 100

Table 14 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

External examination of offspring

Generation : F0

Study No. : R-1244

Days after birth : 0

Species : Rat

	EES	EES	EES	EES
Test article				
Dose	0	5	15	50
Dose unit	mg/kg	mg/kg	mg/kg	mg/kg
Number of dams	11	12	10	11
Number of offspring	166	192	148	166
Number of dams with anomalous offspring (incidence %) a)	0(0.0)	0(0.0)	0(0.0)	0(0.0)
Number of offspring with any anomaly (incidence %) b)	0(0.0)	0(0.0)	0(0.0)	0(0.0)

The group mean is the same and unbiased variance 0 for all groups. All data of all groups are same.

EES: Ethyl ethyldimethyltetradecylammonium sulphate

a): (Number of dams bearing pups with external anomalies / Number of dams) x 100

b): (Number of pups with external anomalies / Number of delivered pups) x 100

Table 15 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Anogenital of offspring

Generation : F0 Unit : mm Species : Rat

Dose Test article	Sex		/Days after birth 0 AGD	 Normalized a) AGD
EES 0 mg/kg	Male	n	11	11
		Mean	2.5	1.3
		S.D.	0.2	0.1
	Female	n	11	11
		Mean	1.0	0.6
		S.D.	0.1	0.1
EES 5 mg/kg	Male	n	12	12
		Mean	2.5	1.4
		S.D.	0.2	0.1
	Female	n	12	12
		Mean	1.0	0.5
		S.D.	0.1	0.0
EES 15 mg/kg	Male	n	10	10
		Mean	2.5	1.3
		S.D.	0.1	0.1
	Female	n	10	10
		Mean	0.9	0.5
		S.D.	0.0	0.0
			DT *	
EES 50 mg/kg	Male	n	11	11
		Mean	2.5	1.3
		S.D.	0.1	0.1
	Female	n	11	11
		Mean	0.9	0.5
		S.D.	0.1	0.0
				DT *

AGD : Anogenital Distance
Significantly different from EES 0 mg/kg : * P<0.05
DT : Dunnett test (two-side)
EES: Ethyl ethyldimethyltetradecylammonium sulphate
a): AGD (mm) / Cube root of body weight (g)

Table 16 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Study No. : R-1244

Litter size and viability index of offspring

Generation : F0

Species : Rat

Test article Dose	/Days after birth	0	4 Pre-culled	4 Viability index (%) a)	4 Culled	13	13 Viability index (%) b)
EES 0 mg/kg	Total	165	164		86	86	
	n	11	11	11	11	11	11
	Mean		14.9	98.7		7.8	100.0
	S.D.		3.4	4.3		0.6	0.0
EES 5 mg/kg	Total	186	181		96	96	
	n	12	12	12	12	12	12
	Mean		15.1	97.8		8.0	100.0
	S.D.		2.0	4.8		0.0	0.0
EES 15 mg/kg	Total	146	142		80	79	
	n	10	10	10	10	10	10
	Mean		14.2	97.5		7.9	98.8
	S.D.		2.1	4.3		0.3	4.0
EES 50 mg/kg	Total	163	160		88	88	
	n	11	11	11	11	11	11
	Mean		14.5	97.9		8.0	100.0
	S.D.		2.4	3.7		0.0	0.0

Not significantly different from EES 0 mg/kg

EES: Ethyl ethyldimethyltetradecylammonium sulphate

a): (Number of pups alive on day 4 after birth / Number of live born pups) × 100

b): (Number of pups alive on day 13 after birth / Number of pups after culling on day 4 after birth) × 100

Table 17 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Sex ratio

Generation : F0 Species : Rat

Test article Dose	Number of dams		day 4 after birth Number of males	Number of females	Sex ratio (%) a)
EES 0 mg/kg	11	Total	76	88	76/164
		(%)			46.3
EES 5 mg/kg	12	Total	91	90	91/181
		(%)			50.3
EES 15 mg/kg	10	Total	61	81	61/142
		(%)			43.0
EES 50 mg/kg	11	Total	72	88	72/160
		(%)			45.0

Not significantly different from EES 0 mg/kg

EES: Ethyl ethyldimethyltetradecylammonium sulphate

a): (Number of male pups alive on day 4 after birth / Number of pups alive on day 4 after birth) × 100

Table 18 - 1

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Study No. : R-1244

Body weight of offspring

Generation : F0

Unit : g

Species : Rat

Test article			/Days after birth				
Dose			0	4/Pre-culled	4/Culled	7	13
EES	Male	n	11	11	11	11	11
0 mg/kg		Mean	6.5	10.2	10.4	17.1	33.1
		S.D.	0.4	1.4	1.5	2.1	3.4
	Female	n	11	11	11	11	11
		Mean	6.1	9.7	10.0	16.4	32.3
		S.D.	0.6	1.5	1.4	1.9	3.1
EES	Male	n	12	12	12	12	12
5 mg/kg		Mean	6.6	10.6	10.9	17.8	34.5
		S.D.	0.4	1.1	1.2	1.7	1.4
	Female	n	12	12	12	12	12
		Mean	6.3	10.2	10.6	17.3	33.5
		S.D.	0.5	1.4	1.4	2.2	2.4
EES	Male	n	10	10	10	10	10
15 mg/kg		Mean	6.7	10.4	10.6	17.3	33.1
		S.D.	0.6	1.2	1.3	1.9	2.4
	Female	n	10	10	10	10	10
		Mean	6.3	9.8	10.1	16.6	32.0
		S.D.	0.6	1.2	1.3	1.8	2.7
EES	Male	n	11	11	11	11	11
50 mg/kg		Mean	6.8	10.3	10.6	17.2	32.2
		S.D.	0.8	1.5	1.4	1.9	2.7
	Female	n	11	11	11	11	11
		Mean	6.4	9.7	10.0	16.2	30.6
		S.D.	0.7	1.4	1.5	2.0	2.9

Not significantly different from EES 0 mg/kg

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 18 - 2 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Body weight gain of offspring Base : Day 4 after birth

Generation : F0 Unit : g Species : Rat

Test article Dose			/Days after birth /Before culling 0-4	/After culling 4-13
EES 0 mg/kg	Male	n	11	11
		Mean	3.7	22.7
		S.D.	1.0	2.6
	Female	n	11	11
		Mean	3.6	22.3
		S.D.	1.0	2.3
EES 5 mg/kg	Male	n	12	12
		Mean	4.0	23.6
		S.D.	0.7	1.1
	Female	n	12	12
		Mean	4.0	22.9
		S.D.	0.9	1.4
EES 15 mg/kg	Male	n	10	10
		Mean	3.7	22.4
		S.D.	0.8	1.6
	Female	n	10	10
		Mean	3.5	21.9
		S.D.	0.7	1.6
EES 50 mg/kg	Male	n	11	11
		Mean	3.5	21.6
		S.D.	0.8	1.8
	Female	n	11	11
		Mean	3.2	20.6
		S.D.	0.8	2.1

Not significantly different from EES 0 mg/kg

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 19 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats
Externally for gross abnormalities in dead pups

Study No. : R-1244

Species : Rat

	Test article Dose	EES 0 mg/kg	EES 5 mg/kg	EES 15 mg/kg	EES 50 mg/kg
Male					
Number of pups examined		1	0	1	1
Number of pups with abnormal findings		0	0	0	0
Female					
Number of pups examined		0	3	1	1
Number of pups with abnormal findings		0	0	0	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 20 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Study No. : R-1244

Nipple retention of male pups

Generation : F0 Unit : No. Species : Rat

Test article			/Days after birth
Dose			13
EES	Male	n	11
0 mg/kg		Mean	0.0
		S.D.	0.0
EES	Male	n	12
5 mg/kg		Mean	0.0
		S.D.	0.0
EES	Male	n	10
15 mg/kg		Mean	0.0
		S.D.	0.0
EES	Male	n	11
50 mg/kg		Mean	0.0
		S.D.	0.0

Not significantly different from EES 0 mg/kg

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Nipple retention: Number of nipple / areolae

Table 21 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats
Gross pathological findings in pups on postnatal day 13

Study No. : R-1244

Species : Rat

Test article Dose	EES 0 mg/kg	EES 5 mg/kg	EES 15 mg/kg	EES 50 mg/kg
Male				
Number of pups examined	46	47	40	42
Number of pups with abnormal findings	0	0	0	0
Female				
Number of pups examined	40	49	39	46
Number of pups with abnormal findings	0	0	0	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 22 - 1 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Organ weight Stage : After culled (F1 males)

Sex : Male Species : Rat

Test article Dose		Body weight g	Thyroid-RL AB mg	 RE mg/100g
EES	n	11	11	11
0 mg/kg	Mean	33.6	5.1	15.0
	S.D.	3.1	3.0	8.4
EES	n	12	12	12
5 mg/kg	Mean	34.8	3.9	11.4
	S.D.	1.9	1.6	4.6
EES	n	10	10	10
15 mg/kg	Mean	34.2	4.7	13.6
	S.D.	2.6	1.6	4.4
EES	n	11	11	11
50 mg/kg	Mean	33.2	4.7	14.3
	S.D.	3.4	1.3	4.2

AB : Absolute weight, RE : Relative weight by body weight
Not significantly different from EES 0 mg/kg
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Table 22 - 2 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Organ weight Stage : After culled (F1 females)

Sex : Female Species : Rat

Test article Dose		Body weight g	Thyroid-RL AB mg	 RE mg/100g
EES	n	11	11	11
0 mg/kg	Mean	32.9	4.2	12.8
	S.D.	3.4	1.7	4.7
EES	n	12	12	12
5 mg/kg	Mean	33.9	3.8	11.4
	S.D.	3.0	1.1	3.8
EES	n	10	10	10
15 mg/kg	Mean	32.5	4.7	14.3
	S.D.	2.9	1.7	4.9
EES	n	11	11	11
50 mg/kg	Mean	31.9	3.7	11.7
	S.D.	2.8	1.6	5.3

AB : Absolute weight, RE : Relative weight by body weight
Not significantly different from EES 0 mg/kg
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 1-1 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/ developmental toxicity screening test in rats Study No. : R-1244

Clinical signs Period : F0 before mating Day 1-15, F0 mating Day 15-43

Sex : Male Dose : EES 0 mg/kg Species : Rat

Animal No.	/Day 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1004	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1006	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1007	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1009	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1011	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

-: No abnormal findings

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 1-2 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/ developmental toxicity screening test in rats Study No. : R-1244

Clinical signs Period : F0 before mating Day 1-15, F0 mating Day 15-43

Sex : Male Dose : EES 0 mg/kg Species : Rat

Animal No.	/Day 22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
1001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1004	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1006	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1007	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1009	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1011	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

-: No abnormal findings

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 1-3 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/ developmental toxicity screening test in rats Study No. : R-1244

Clinical signs Period : F0 before mating Day 1-15, F0 mating Day 15-43

Sex : Male Dose : EES 0 mg/kg Species : Rat

Animal No.	/Day 43 a)
1001	-
1002	-
1003	-
1004	-
1005	-
1006	-
1007	-
1008	
1009	
1010	
1011	
1012	

-: No abnormal findings

a): Day of necropsy

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 1-4 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/ developmental toxicity screening test in rats Study No. : R-1244

Clinical signs Period : F0 before mating Day 1-15, F0 mating Day 15-43

Sex : Male Dose : EES 5 mg/kg Species : Rat

Animal No.	/Day 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
2001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2004	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2006	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2007	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2009	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

-: No abnormal findings

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 1-5 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/ developmental toxicity screening test in rats Study No. : R-1244

Clinical signs Period : F0 before mating Day 1-15, F0 mating Day 15-43

Sex : Male Dose : EES 5 mg/kg Species : Rat

Animal No.	/Day 22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
2001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2004	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2006	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2007	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2009	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

-: No abnormal findings

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 1-6 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/ developmental toxicity screening test in rats Study No. : R-1244

Clinical signs Period : F0 before mating Day 1-15, F0 mating Day 15-43

Sex : Male Dose : EES 5 mg/kg Species : Rat

Animal No.	/Day 43 a)
2001	-
2002	-
2003	-
2004	-
2005	-
2006	-
2007	-
2008	-
2009	-
2010	-
2011	-
2012	-

-: No abnormal findings

a): Day of necropsy

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 1-7 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/ developmental toxicity screening test in rats Study No. : R-1244

Clinical signs Period : F0 before mating Day 1-15, F0 mating Day 15-43

Sex : Male Dose : EES 15 mg/kg Species : Rat

Animal No.	/Day 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
3001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3004	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3006	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3007	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3009	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3011	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

-: No abnormal findings

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 1-8 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/ developmental toxicity screening test in rats Study No. : R-1244

Clinical signs Period : F0 before mating Day 1-15, F0 mating Day 15-43

Sex : Male Dose : EES 15 mg/kg Species : Rat

Animal No.	/Day 22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
3001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3004	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3006	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3007	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3009	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3011	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

-: No abnormal findings

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 1-9 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/ developmental toxicity screening test in rats Study No. : R-1244

Clinical signs Period : F0 before mating Day 1-15, F0 mating Day 15-43

Sex : Male Dose : EES 15 mg/kg Species : Rat

Animal No.	/Day 43 a)
3001	-
3002	-
3003	-
3004	-
3005	-
3006	-
3007	-
3008	-
3009	-
3010	-
3011	-
3012	-

-: No abnormal findings

a): Day of necropsy

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 1-10 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/ developmental toxicity screening test in rats Study No. : R-1244

Clinical signs Period : F0 before mating Day 1-15, F0 mating Day 15-43

Sex : Male Dose : EES 50 mg/kg Species : Rat

Animal No.	/Day 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
4001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4004	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4006	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4007	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4009	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4011	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

-: No abnormal findings

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 1-11 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/ developmental toxicity screening test in rats Study No. : R-1244

Clinical signs Period : F0 before mating Day 1-15, F0 mating Day 15-43

Sex : Male Dose : EES 50 mg/kg Species : Rat

Animal No.	/Day 22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
4001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4004	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4006	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4007	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4009	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4011	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

-: No abnormal findings

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 1-12 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/ developmental toxicity screening test in rats Study No. : R-1244

Clinical signs Period : F0 before mating Day 1-15, F0 mating Day 15-43

Sex : Male Dose : EES 50 mg/kg Species : Rat

Animal No.	/Day 43 a)
4001	-
4002	-
4003	-
4004	-
4005	-
4006	-
4007	-
4008	
4009	
4010	
4011	
4012	

-: No abnormal findings

a): Day of necropsy

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 1-13 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/ developmental toxicity screening test in rats Study No. : R-1244

Clinical signs Period : F0 before mating Day 1-15

Sex : Female Dose : EES 0 mg/kg Species : Rat

Animal No.	/Day 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1101	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1102	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1103	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1104	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1105	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1106	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1107	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1108	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1109	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1110	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1111	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1112	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

-: No abnormal findings

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 1-14 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/ developmental toxicity screening test in rats Study No. : R-1244

Clinical signs Period : F0 before mating Day 1-15

Sex : Female Dose : EES 5 mg/kg Species : Rat

Animal No.	/Day 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
2101	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2102	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2103	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2104	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2105	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2106	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2107	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2108	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2109	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2110	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2111	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2112	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

-: No abnormal findings

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 1-15 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/ developmental toxicity screening test in rats Study No. : R-1244

Clinical signs Period : F0 before mating Day 1-15

Sex : Female Dose : EES 15 mg/kg Species : Rat

Animal No.	/Day 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
3101	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3102	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3103	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3104	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3105	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3106	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3107	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3108	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3109	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3110	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3111	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3112	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

-: No abnormal findings

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 1-16 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/ developmental toxicity screening test in rats Study No. : R-1244

Clinical signs Period : F0 before mating Day 1-15

Sex : Female Dose : EES 50 mg/kg Species : Rat

Animal No.	/Day 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
4101	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4102	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4103	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4104	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4105	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4106	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4107	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4108	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4109	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4110	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4111	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4112	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

-: No abnormal findings

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 1 - 17 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/ developmental toxicity screening test in rats Study No. : R-1244

Clinical signs in dams Period : F0 gestation Day 0-25

Sex : Female Dose : EES 0 mg/kg Species : Rat

Animal No.	/Day 0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
1101	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
1102	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
1103	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
1104	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
1105	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
1106	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
1107	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
1108	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
1109	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
1110	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
1111	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			

-: No abnormal findings

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 1 - 18 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/ developmental toxicity screening test in rats Study No. : R-1244

Clinical signs in dams Period : F0 gestation Day 0-25

Sex : Female Dose : EES 5 mg/kg Species : Rat

Animal No.	/Day 0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
2101	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
2102	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
2103	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
2104	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
2105	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
2106	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
2107	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
2108	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
2109	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
2110	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
2111	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
2112	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				

-: No abnormal findings

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 1 - 19 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/ developmental toxicity screening test in rats Study No. : R-1244

Clinical signs in dams Period : F0 gestation Day 0-25

Sex : Female Dose : EES 15 mg/kg Species : Rat

Animal No.	/Day 0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
3101	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
3103	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
3104	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
3105	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3106	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
3107	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
3108	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
3109	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
3110	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
3111	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
3112	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			

-: No abnormal findings

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 1 - 20 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/ developmental toxicity screening test in rats Study No. : R-1244

Clinical signs in dams Period : F0 gestation Day 0-25

Sex : Female Dose : EES 50 mg/kg Species : Rat

Animal No.	/Day 0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
4101	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
4103	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
4104	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
4105	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
4106	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
4107	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
4108	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
4109	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
4110	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
4111	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
4112	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				

-: No abnormal findings

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 1-21 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/ developmental toxicity screening test in rats Study No. : R-1244

Clinical signs in dams Period : F0 lactation Day 0-14

Sex : Female Dose : EES 0 mg/kg Species : Rat

Animal No.	/Day 0	1	2	3	4	5	6	7	8	9	10	11	12	13	14 a)
1101		-	-	-	-	-	-	-	-	-	-	-	-	-	-
1102		-	-	-	-	-	-	-	-	-	-	-	-	-	-
1103	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1104	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1105	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1106	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1107	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1108	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1109		-	-	-	-	-	-	-	-	-	-	-	-	-	-
1110	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1111		-	-	-	-	-	-	-	-	-	-	-	-	-	-

-: No abnormal findings

a): Day of necropsy

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 1-22 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/ developmental toxicity screening test in rats Study No. : R-1244

Clinical signs in dams Period : F0 lactation Day 0-14

Sex : Female Dose : EES 5 mg/kg Species : Rat

Animal No.	/Day 0	1	2	3	4	5	6	7	8	9	10	11	12	13	14 a)
2101	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2102		-	-	-	-	-	-	-	-	-	-	-	-	-	-
2103	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2104		-	-	-	-	-	-	-	-	-	-	-	-	-	-
2105	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2106	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2107	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2108	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2109		-	-	-	-	-	-	-	-	-	-	-	-	-	-
2110	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2111	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2112	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

-: No abnormal findings

a): Day of necropsy

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 1-23 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/ developmental toxicity screening test in rats Study No. : R-1244

Clinical signs in dams Period : F0 lactation Day 0-14

Sex : Female Dose : EES 15 mg/kg Species : Rat

Animal No.	/Day 0	1	2	3	4	5	6	7	8	9	10	11	12	13	14 a)
3101		-	-	-	-	-	-	-	-	-	-	-	-	-	-
3103		-	-	-	-	-	-	-	-	-	-	-	-	-	-
3104		-	-	-	-	-	-	-	-	-	-	-	-	-	-
3106	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3107		-	-	-	-	-	-	-	-	-	-	-	-	-	-
3108	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3109	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3110		-	-	-	-	-	-	-	-	-	-	-	-	-	-
3111	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3112		-	-	-	-	-	-	-	-	-	-	-	-	-	-

-: No abnormal findings

a): Day of necropsy

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 1-24 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/ developmental toxicity screening test in rats Study No. : R-1244

Clinical signs in dams Period : F0 lactation Day 0-14

Sex : Female Dose : EES 50 mg/kg Species : Rat

Animal No.	/Day 0	1	2	3	4	5	6	7	8	9	10	11	12	13	14 a)
4101	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4103	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4104	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4105	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4106	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4107		-	-	-	-	-	-	-	-	-	-	-	-	-	-
4108		-	-	-	-	-	-	-	-	-	-	-	-	-	-
4109	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4110	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4111	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4112	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

-: No abnormal findings

a): Day of necropsy

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 1 - 25 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/ developmental toxicity screening test in rats Study No. : R-1244

Clinical signs Period : Administration Day 1-43 (non-mating group)

Sex : Female Dose : EES 0 mg/kg Species : Rat

Animal No.	/Day 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
5101	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5102	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5103	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5104	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5105	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5106	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5107	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5108	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5109	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5110	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Animal No.	/Day 22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
5101	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5102	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5103	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5104	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5105	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5106	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5107	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5108	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5109	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5110	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

-: No abnormal findings

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 1 - 26 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/ developmental toxicity screening test in rats Study No. : R-1244

Clinical signs Period : Administration Day 1-43 (non-mating group)

Sex : Female Dose : EES 0 mg/kg Species : Rat

Animal No.	/Day 43 a)
5101	-
5102	-
5103	-
5104	-
5105	-
5106	
5107	
5108	
5109	
5110	

-: No abnormal findings

a): Day of necropsy

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 1 -27 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/ developmental toxicity screening test in rats Study No. : R-1244

Clinical signs Period : Administration Day 1-43 (non-mating group)

Sex : Female Dose : EES 50 mg/kg Species : Rat

Animal No.	/Day 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
6101	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6102	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6103	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6104	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6105	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6106	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6107	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6108	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6109	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6110	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Animal No.	/Day 22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
6101	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6102	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6103	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6104	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6105	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6106	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6107	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6108	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6109	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6110	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

-: No abnormal findings

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Clinical signs
Period : Administration Day 1-43 (non-mating group)
Sex : Female
Dose : EES 50 mg/kg
Species : Rat

Animal No.	/Day 43 a)
6101	-
6102	-
6103	-
6104	-
6105	-
6106	
6107	
6108	
6109	
6110	

-: No abnormal findings
a): Day of necropsy
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 1-29 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/ developmental toxicity screening test in rats Study No. : R-1244

Clinical signs Period : Recovery Day 1-15

Sex : Male Dose : EES 0 mg/kg Species : Rat

Animal No.	/Day 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15 a)
1008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1009	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1011	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

-: No abnormal findings

a): Day of necropsy

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 1-30 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/ developmental toxicity screening test in rats Study No. : R-1244

Clinical signs Period : Recovery Day 1-15

Sex : Male Dose : EES 50 mg/kg Species : Rat

Animal No.	/Day 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15 a)
4008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4009	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4011	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

-: No abnormal findings

a): Day of necropsy

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 1-31 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/ developmental toxicity screening test in rats Study No. : R-1244

Clinical signs Period : Recovery Day 1-15

Sex : Female Dose : EES 0 mg/kg Species : Rat

Animal No.	/Day 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15 a)
5106	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5107	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5108	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5109	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5110	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

-: No abnormal findings

a): Day of necropsy

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 1-32 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/ developmental toxicity screening test in rats Study No. : R-1244

Clinical signs Period : Recovery Day 1-15

Sex : Female Dose : EES 50 mg/kg Species : Rat

Animal No.	/Day 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15 a)
6106	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6107	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6108	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6109	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6110	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

-: No abnormal findings

a): Day of necropsy

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 2 - 1 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Home cage observation Period : F0 before mating

Generation : F0 Sex : Male Week : 1 Dose : EES 0 mg/kg Species : Rat

Animal No.	Posture	Convulsion	Abnormal behavior
1001	N	0	0
1002	N	0	0
1003	N	0	0
1004	N	0	0
1005	N	0	0
1006	N	0	0
1007	N	0	0
1008	N	0	0
1009	N	0	0
1010	N	0	0
1011	N	0	0
1012	N	0	0
n	12	12	12

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 2 - 2 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Home cage observation Period : F0 before mating

Generation : F0 Sex : Male Week : 1 Dose : EES 5 mg/kg Species : Rat

Animal No.	Posture	Convulsion	Abnormal behavior
2001	N	0	0
2002	N	0	0
2003	N	0	0
2004	N	0	0
2005	N	0	0
2006	N	0	0
2007	N	0	0
2008	N	0	0
2009	N	0	0
2010	N	0	0
2011	N	0	0
2012	N	0	0
n	12	12	12

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 2 - 3 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Home cage observation Period : F0 before mating

Generation : F0 Sex : Male Week : 1 Dose : EES 15 mg/kg Species : Rat

Animal No.	Posture	Convulsion	Abnormal behavior
3001	N	0	0
3002	N	0	0
3003	N	0	0
3004	N	0	0
3005	N	0	0
3006	N	0	0
3007	N	0	0
3008	N	0	0
3009	N	0	0
3010	N	0	0
3011	N	0	0
3012	N	0	0
n	12	12	12

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 2 - 4 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Home cage observation Period : F0 before mating

Generation : F0 Sex : Male Week : 1 Dose : EES 50 mg/kg Species : Rat

Animal No.	Posture	Convulsion	Abnormal behavior
4001	N	0	0
4002	N	0	0
4003	N	0	0
4004	N	0	0
4005	N	0	0
4006	N	0	0
4007	N	0	0
4008	N	0	0
4009	N	0	0
4010	N	0	0
4011	N	0	0
4012	N	0	0
n	12	12	12

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 2 - 5 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Home cage observation Period : F0 before mating

Generation : F0 Sex : Male Week : 2 Dose : EES 0 mg/kg Species : Rat

Animal No.	Posture	Convulsion	Abnormal behavior
1001	N	0	0
1002	N	0	0
1003	N	0	0
1004	N	0	0
1005	N	0	0
1006	N	0	0
1007	N	0	0
1008	N	0	0
1009	N	0	0
1010	N	0	0
1011	N	0	0
1012	N	0	0
n	12	12	12

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 2 - 6 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Home cage observation Period : F0 before mating

Generation : F0 Sex : Male Week : 2 Dose : EES 5 mg/kg Species : Rat

Animal No.	Posture	Convulsion	Abnormal behavior
2001	N	0	0
2002	N	0	0
2003	N	0	0
2004	N	0	0
2005	N	0	0
2006	N	0	0
2007	N	0	0
2008	N	0	0
2009	N	0	0
2010	N	0	0
2011	N	0	0
2012	N	0	0
n	12	12	12

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 2 - 7 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Home cage observation Period : F0 before mating

Generation : F0 Sex : Male Week : 2 Dose : EES 15 mg/kg Species : Rat

Animal No.	Posture	Convulsion	Abnormal behavior
3001	N	0	0
3002	N	0	0
3003	N	0	0
3004	N	0	0
3005	N	0	0
3006	N	0	0
3007	N	0	0
3008	N	0	0
3009	N	0	0
3010	N	0	0
3011	N	0	0
3012	N	0	0
n	12	12	12

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 2 - 8 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Home cage observation Period : F0 before mating

Generation : F0 Sex : Male Week : 2 Dose : EES 50 mg/kg Species : Rat

Animal No.	Posture	Convulsion	Abnormal behavior
4001	N	0	0
4002	N	0	0
4003	N	0	0
4004	N	0	0
4005	N	0	0
4006	N	0	0
4007	N	0	0
4008	N	0	0
4009	N	0	0
4010	N	0	0
4011	N	0	0
4012	N	0	0
n	12	12	12

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 2 - 9 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Home cage observation Period : F0 mating

Generation : F0 Sex : Male Week : 3 Dose : EES 0 mg/kg Species : Rat

Animal No.	Posture	Convulsion	Abnormal behavior
1001	N	0	0
1002	N	0	0
1003	N	0	0
1004	N	0	0
1005	N	0	0
1006	N	0	0
1007	N	0	0
1008	N	0	0
1009	N	0	0
1010	N	0	0
1011	N	0	0
1012	N	0	0
n	12	12	12

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 2 - 10 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Home cage observation Period : F0 mating

Generation : F0 Sex : Male Week : 3 Dose : EES 5 mg/kg Species : Rat

Animal No.	Posture	Convulsion	Abnormal behavior
2001	N	0	0
2002	N	0	0
2003	N	0	0
2004	N	0	0
2005	N	0	0
2006	N	0	0
2007	N	0	0
2008	N	0	0
2009	N	0	0
2010	N	0	0
2011	N	0	0
2012	N	0	0
n	12	12	12

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 2 - 11 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Home cage observation Period : F0 mating

Generation : F0 Sex : Male Week : 3 Dose : EES 15 mg/kg Species : Rat

Animal No.	Posture	Convulsion	Abnormal behavior
3001	N	0	0
3002	N	0	0
3003	N	0	0
3004	N	0	0
3005	N	0	0
3006	N	0	0
3007	N	0	0
3008	N	0	0
3009	N	0	0
3010	N	0	0
3011	N	0	0
3012	N	0	0
n	12	12	12

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 2 - 12 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Home cage observation Period : F0 mating

Generation : F0 Sex : Male Week : 3 Dose : EES 50 mg/kg Species : Rat

Animal No.	Posture	Convulsion	Abnormal behavior
4001	N	0	0
4002	N	0	0
4003	N	0	0
4004	N	0	0
4005	N	0	0
4006	N	0	0
4007	N	0	0
4008	N	0	0
4009	N	0	0
4010	N	0	0
4011	N	0	0
4012	N	0	0
n	12	12	12

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 2 - 13 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Home cage observation Period : F0 mating

Generation : F0 Sex : Male Week : 4 Dose : EES 0 mg/kg Species : Rat

Animal No.	Posture	Convulsion	Abnormal behavior
1001	N	0	0
1002	N	0	0
1003	N	0	0
1004	N	0	0
1005	N	0	0
1006	N	0	0
1007	N	0	0
1008	N	0	0
1009	N	0	0
1010	N	0	0
1011	N	0	0
1012	N	0	0
n	12	12	12

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 2 - 14 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Home cage observation Period : F0 mating

Generation : F0 Sex : Male Week : 4 Dose : EES 5 mg/kg Species : Rat

Animal No.	Posture	Convulsion	Abnormal behavior
2001	N	0	0
2002	N	0	0
2003	N	0	0
2004	N	0	0
2005	N	0	0
2006	N	0	0
2007	N	0	0
2008	N	0	0
2009	N	0	0
2010	N	0	0
2011	N	0	0
2012	N	0	0
n	12	12	12

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 2 - 15 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Home cage observation Period : F0 mating

Generation : F0 Sex : Male Week : 4 Dose : EES 15 mg/kg Species : Rat

Animal No.	Posture	Convulsion	Abnormal behavior
3001	N	0	0
3002	N	0	0
3003	N	0	0
3004	N	0	0
3005	N	0	0
3006	N	0	0
3007	N	0	0
3008	N	0	0
3009	N	0	0
3010	N	0	0
3011	N	0	0
3012	N	0	0
n	12	12	12

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 2 - 16 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Home cage observation Period : F0 mating

Generation : F0 Sex : Male Week : 4 Dose : EES 50 mg/kg Species : Rat

Animal No.	Posture	Convulsion	Abnormal behavior
4001	N	0	0
4002	N	0	0
4003	N	0	0
4004	N	0	0
4005	N	0	0
4006	N	0	0
4007	N	0	0
4008	N	0	0
4009	N	0	0
4010	N	0	0
4011	N	0	0
4012	N	0	0
n	12	12	12

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 2 - 17 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Home cage observation Period : F0 mating

Generation : F0 Sex : Male Week : 5 Dose : EES 0 mg/kg Species : Rat

Animal No.	Posture	Convulsion	Abnormal behavior
1001	N	0	0
1002	N	0	0
1003	N	0	0
1004	N	0	0
1005	N	0	0
1006	N	0	0
1007	N	0	0
1008	N	0	0
1009	N	0	0
1010	N	0	0
1011	N	0	0
1012	N	0	0
n	12	12	12

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 2 - 18 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Home cage observation Period : F0 mating

Generation : F0 Sex : Male Week : 5 Dose : EES 5 mg/kg Species : Rat

Animal No.	Posture	Convulsion	Abnormal behavior
2001	N	0	0
2002	N	0	0
2003	N	0	0
2004	N	0	0
2005	N	0	0
2006	N	0	0
2007	N	0	0
2008	N	0	0
2009	N	0	0
2010	N	0	0
2011	N	0	0
2012	N	0	0
n	12	12	12

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 2 - 19 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Home cage observation Period : F0 mating

Generation : F0 Sex : Male Week : 5 Dose : EES 15 mg/kg Species : Rat

Animal No.	Posture	Convulsion	Abnormal behavior
3001	N	0	0
3002	N	0	0
3003	N	0	0
3004	N	0	0
3005	N	0	0
3006	N	0	0
3007	N	0	0
3008	N	0	0
3009	N	0	0
3010	N	0	0
3011	N	0	0
3012	N	0	0
n	12	12	12

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 2 - 20 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Home cage observation Period : F0 mating

Generation : F0 Sex : Male Week : 5 Dose : EES 50 mg/kg Species : Rat

Animal No.	Posture	Convulsion	Abnormal behavior
4001	N	0	0
4002	N	0	0
4003	N	0	0
4004	N	0	0
4005	N	0	0
4006	N	0	0
4007	N	0	0
4008	N	0	0
4009	N	0	0
4010	N	0	0
4011	N	0	0
4012	N	0	0
n	12	12	12

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 2 - 21 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Home cage observation Period : F0 mating

Generation : F0 Sex : Male Week : 6 Dose : EES 0 mg/kg Species : Rat

Animal No.	Posture	Convulsion	Abnormal behavior
1001	N	0	0
1002	N	0	0
1003	N	0	0
1004	N	0	0
1005	N	0	0
1006	N	0	0
1007	N	0	0
1008	N	0	0
1009	N	0	0
1010	N	0	0
1011	N	0	0
1012	N	0	0
n	12	12	12

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 2 - 22 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Home cage observation Period : F0 mating

Generation : F0 Sex : Male Week : 6 Dose : EES 5 mg/kg Species : Rat

Animal No.	Posture	Convulsion	Abnormal behavior
2001	N	0	0
2002	N	0	0
2003	N	0	0
2004	N	0	0
2005	N	0	0
2006	N	0	0
2007	N	0	0
2008	N	0	0
2009	N	0	0
2010	N	0	0
2011	N	0	0
2012	N	0	0
n	12	12	12

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 2 - 23 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Home cage observation Period : F0 mating

Generation : F0 Sex : Male Week : 6 Dose : EES 15 mg/kg Species : Rat

Animal No.	Posture	Convulsion	Abnormal behavior
3001	N	0	0
3002	N	0	0
3003	N	0	0
3004	N	0	0
3005	N	0	0
3006	N	0	0
3007	N	0	0
3008	N	0	0
3009	N	0	0
3010	N	0	0
3011	N	0	0
3012	N	0	0
n	12	12	12

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 2 - 24 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Home cage observation Period : F0 mating

Generation : F0 Sex : Male Week : 6 Dose : EES 50 mg/kg Species : Rat

Animal No.	Posture	Convulsion	Abnormal behavior
4001	N	0	0
4002	N	0	0
4003	N	0	0
4004	N	0	0
4005	N	0	0
4006	N	0	0
4007	N	0	0
4008	N	0	0
4009	N	0	0
4010	N	0	0
4011	N	0	0
4012	N	0	0
n	12	12	12

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 2 - 25 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Home cage observation Period : F0 before mating

Generation : F0 Sex : Female Week : 1 Dose : EES 0 mg/kg Species : Rat

Animal No.	Posture	Convulsion	Abnormal behavior
1101	N	0	0
1102	N	0	0
1103	N	0	0
1104	N	0	0
1105	N	0	0
1106	N	0	0
1107	N	0	0
1108	N	0	0
1109	N	0	0
1110	N	0	0
1111	N	0	0
1112	N	0	0
n	12	12	12

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 2 - 26 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Home cage observation Period : F0 before mating

Generation : F0 Sex : Female Week : 1 Dose : EES 5 mg/kg Species : Rat

Animal No.	Posture	Convulsion	Abnormal behavior
2101	N	0	0
2102	N	0	0
2103	N	0	0
2104	N	0	0
2105	N	0	0
2106	N	0	0
2107	N	0	0
2108	N	0	0
2109	N	0	0
2110	N	0	0
2111	N	0	0
2112	N	0	0
n	12	12	12

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 2 - 27 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Home cage observation Period : F0 before mating

Generation : F0 Sex : Female Week : 1 Dose : EES 15 mg/kg Species : Rat

Animal No.	Posture	Convulsion	Abnormal behavior
3101	N	0	0
3102	N	0	0
3103	N	0	0
3104	N	0	0
3105	N	0	0
3106	N	0	0
3107	N	0	0
3108	N	0	0
3109	N	0	0
3110	N	0	0
3111	N	0	0
3112	N	0	0
n	12	12	12

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 2 - 28 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Home cage observation Period : F0 before mating

Generation : F0 Sex : Female Week : 1 Dose : EES 50 mg/kg Species : Rat

Animal No.	Posture	Convulsion	Abnormal behavior
4101	N	0	0
4102	N	0	0
4103	N	0	0
4104	N	0	0
4105	N	0	0
4106	N	0	0
4107	N	0	0
4108	N	0	0
4109	N	0	0
4110	N	0	0
4111	N	0	0
4112	N	0	0
n	12	12	12

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 2 - 29 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Home cage observation Period : F0 before mating

Generation : F0 Sex : Female Week : 2 Dose : EES 0 mg/kg Species : Rat

Animal No.	Posture	Convulsion	Abnormal behavior
1101	N	0	0
1102	N	0	0
1103	N	0	0
1104	N	0	0
1105	N	0	0
1106	N	0	0
1107	N	0	0
1108	N	0	0
1109	N	0	0
1110	N	0	0
1111	N	0	0
1112	N	0	0
n	12	12	12

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 2 - 30 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Home cage observation Period : F0 before mating

Generation : F0 Sex : Female Week : 2 Dose : EES 5 mg/kg Species : Rat

Animal No.	Posture	Convulsion	Abnormal behavior
2101	N	0	0
2102	N	0	0
2103	N	0	0
2104	N	0	0
2105	N	0	0
2106	N	0	0
2107	N	0	0
2108	N	0	0
2109	N	0	0
2110	N	0	0
2111	N	0	0
2112	N	0	0
n	12	12	12

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 2 - 31 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Home cage observation Period : F0 before mating

Generation : F0 Sex : Female Week : 2 Dose : EES 15 mg/kg Species : Rat

Animal No.	Posture	Convulsion	Abnormal behavior
3101	N	0	0
3102	N	0	0
3103	N	0	0
3104	N	0	0
3105	N	0	0
3106	N	0	0
3107	N	0	0
3108	N	0	0
3109	N	0	0
3110	N	0	0
3111	N	0	0
3112	N	0	0
n	12	12	12

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 2 - 32 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Home cage observation Period : F0 before mating

Generation : F0 Sex : Female Week : 2 Dose : EES 50 mg/kg Species : Rat

Animal No.	Posture	Convulsion	Abnormal behavior
4101	N	0	0
4102	N	0	0
4103	N	0	0
4104	N	0	0
4105	N	0	0
4106	N	0	0
4107	N	0	0
4108	N	0	0
4109	N	0	0
4110	N	0	0
4111	N	0	0
4112	N	0	0
n	12	12	12

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 2 - 33 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Home cage observation Period : F0 gestation

Generation : F0 Sex : Female Day : 1 Dose : EES 0 mg/kg Species : Rat

Animal No.	Posture	Convulsion	Abnormal behavior
1101	N	0	0
1102	N	0	0
1103	N	0	0
1104	N	0	0
1105	N	0	0
1106	N	0	0
1107	N	0	0
1108	N	0	0
1109	N	0	0
1110	N	0	0
1111	N	0	0
n	11	11	11

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 2 - 34 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Home cage observation Period : F0 gestation

Generation : F0 Sex : Female Day : 1 Dose : EES 5 mg/kg Species : Rat

Animal No.	Posture	Convulsion	Abnormal behavior
2101	N	0	0
2102	N	0	0
2103	N	0	0
2104	N	0	0
2105	N	0	0
2106	N	0	0
2107	N	0	0
2108	N	0	0
2109	N	0	0
2110	N	0	0
2111	N	0	0
2112	N	0	0
n	12	12	12

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 2 - 35 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Home cage observation Period : F0 gestation

Generation : F0 Sex : Female Day : 1 Dose : EES 15 mg/kg Species : Rat

Animal No.	Posture	Convulsion	Abnormal behavior
3101	N	0	0
3103	N	0	0
3104	N	0	0
3105	N	0	0
3106	N	0	0
3107	N	0	0
3108	N	0	0
3109	N	0	0
3110	N	0	0
3111	N	0	0
3112	N	0	0
n	11	11	11

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 2 - 36 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Home cage observation Period : F0 gestation

Generation : F0 Sex : Female Day : 1 Dose : EES 50 mg/kg Species : Rat

Animal No.	Posture	Convulsion	Abnormal behavior
4101	N	0	0
4103	N	0	0
4104	N	0	0
4105	N	0	0
4106	N	0	0
4107	N	0	0
4108	N	0	0
4109	N	0	0
4110	N	0	0
4111	N	0	0
4112	N	0	0
n	11	11	11

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 2 - 37 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Home cage observation Period : F0 gestation

Generation : F0 Sex : Female Day : 7 Dose : EES 0 mg/kg Species : Rat

Animal No.	Posture	Convulsion	Abnormal behavior
1101	N	0	0
1102	N	0	0
1103	N	0	0
1104	N	0	0
1105	N	0	0
1106	N	0	0
1107	N	0	0
1108	N	0	0
1109	N	0	0
1110	N	0	0
1111	N	0	0
n	11	11	11

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 2 - 38 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Home cage observation Period : F0 gestation

Generation : F0 Sex : Female Day : 7 Dose : EES 5 mg/kg Species : Rat

Animal No.	Posture	Convulsion	Abnormal behavior
2101	N	0	0
2102	N	0	0
2103	N	0	0
2104	N	0	0
2105	N	0	0
2106	N	0	0
2107	N	0	0
2108	N	0	0
2109	N	0	0
2110	N	0	0
2111	N	0	0
2112	N	0	0
n	12	12	12

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 2 - 39 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Home cage observation Period : F0 gestation

Generation : F0 Sex : Female Day : 7 Dose : EES 15 mg/kg Species : Rat

Animal No.	Posture	Convulsion	Abnormal behavior
3101	N	0	0
3103	N	0	0
3104	N	0	0
3105	N	0	0
3106	N	0	0
3107	N	0	0
3108	N	0	0
3109	N	0	0
3110	N	0	0
3111	N	0	0
3112	N	0	0
n	11	11	11

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 2 - 40 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Home cage observation Period : F0 gestation

Generation : F0 Sex : Female Day : 7 Dose : EES 50 mg/kg Species : Rat

Animal No.	Posture	Convulsion	Abnormal behavior
4101	N	0	0
4103	N	0	0
4104	N	0	0
4105	N	0	0
4106	N	0	0
4107	N	0	0
4108	N	0	0
4109	N	0	0
4110	N	0	0
4111	N	0	0
4112	N	0	0
n	11	11	11

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 2 - 41 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Home cage observation Period : F0 gestation

Generation : F0 Sex : Female Day : 14 Dose : EES 0 mg/kg Species : Rat

Animal No.	Posture	Convulsion	Abnormal behavior
1101	N	0	0
1102	N	0	0
1103	N	0	0
1104	N	0	0
1105	N	0	0
1106	N	0	0
1107	N	0	0
1108	N	0	0
1109	N	0	0
1110	N	0	0
1111	N	0	0
n	11	11	11

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 2 - 42 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Home cage observation Period : F0 gestation

Generation : F0 Sex : Female Day : 14 Dose : EES 5 mg/kg Species : Rat

Animal No.	Posture	Convulsion	Abnormal behavior
2101	N	0	0
2102	N	0	0
2103	N	0	0
2104	N	0	0
2105	N	0	0
2106	N	0	0
2107	N	0	0
2108	N	0	0
2109	N	0	0
2110	N	0	0
2111	N	0	0
2112	N	0	0
n	12	12	12

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 2 - 43 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Home cage observation Period : F0 gestation

Generation : F0 Sex : Female Day : 14 Dose : EES 15 mg/kg Species : Rat

Animal No.	Posture	Convulsion	Abnormal behavior
3101	N	0	0
3103	N	0	0
3104	N	0	0
3105	N	0	0
3106	N	0	0
3107	N	0	0
3108	N	0	0
3109	N	0	0
3110	N	0	0
3111	N	0	0
3112	N	0	0
n	11	11	11

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Study No. : R-1244

Home cage observation

Period : F0 gestation

Generation : F0 Sex : Female Day : 14 Dose : EES 50 mg/kg Species : Rat

Animal No.	Posture	Convulsion	Abnormal behavior
4101	N	0	0
4103	N	0	0
4104	N	0	0
4105	N	0	0
4106	N	0	0
4107	N	0	0
4108	N	0	0
4109	N	0	0
4110	N	0	0
4111	N	0	0
4112	N	0	0
n	11	11	11

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 2 - 45 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Home cage observation Period : F0 gestation

Generation : F0 Sex : Female Day : 20 Dose : EES 0 mg/kg Species : Rat

Animal No.	Posture	Convulsion	Abnormal behavior
1101	N	0	0
1102	N	0	0
1103	N	0	0
1104	N	0	0
1105	N	0	0
1106	N	0	0
1107	N	0	0
1108	N	0	0
1109	N	0	0
1110	N	0	0
1111	N	0	0
n	11	11	11

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 2 - 46 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Home cage observation Period : F0 gestation

Generation : F0 Sex : Female Day : 20 Dose : EES 5 mg/kg Species : Rat

Animal No.	Posture	Convulsion	Abnormal behavior
2101	N	0	0
2102	N	0	0
2103	N	0	0
2104	N	0	0
2105	N	0	0
2106	N	0	0
2107	N	0	0
2108	N	0	0
2109	N	0	0
2110	N	0	0
2111	N	0	0
2112	N	0	0
n	12	12	12

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 2 - 47 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Home cage observation Period : F0 gestation

Generation : F0 Sex : Female Day : 20 Dose : EES 15 mg/kg Species : Rat

Animal No.	Posture	Convulsion	Abnormal behavior
3101	N	0	0
3103	N	0	0
3104	N	0	0
3105	N	0	0
3106	N	0	0
3107	N	0	0
3108	N	0	0
3109	N	0	0
3110	N	0	0
3111	N	0	0
3112	N	0	0
n	11	11	11

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 2 - 48 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Home cage observation Period : F0 gestation

Generation : F0 Sex : Female Day : 20 Dose : EES 50 mg/kg Species : Rat

Animal No.	Posture	Convulsion	Abnormal behavior
4101	N	0	0
4103	N	0	0
4104	N	0	0
4105	N	0	0
4106	N	0	0
4107	N	0	0
4108	N	0	0
4109	N	0	0
4110	N	0	0
4111	N	0	0
4112	N	0	0
n	11	11	11

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 2 - 49 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Home cage observation Period : F0 lactation

Generation : F0 Sex : Female Day : 6 Dose : EES 0 mg/kg Species : Rat

Animal No.	Posture	Convulsion	Abnormal behavior
1101	N	0	0
1102	N	0	0
1103	N	0	0
1104	N	0	0
1105	N	0	0
1106	N	0	0
1107	N	0	0
1108	N	0	0
1109	N	0	0
1110	N	0	0
1111	N	0	0
n	11	11	11

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 2 - 50 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Home cage observation Period : F0 lactation

Generation : F0 Sex : Female Day : 6 Dose : EES 5 mg/kg Species : Rat

Animal No.	Posture	Convulsion	Abnormal behavior
2101	N	0	0
2102	N	0	0
2103	N	0	0
2104	N	0	0
2105	N	0	0
2106	N	0	0
2107	N	0	0
2108	N	0	0
2109	N	0	0
2110	N	0	0
2111	N	0	0
2112	N	0	0
n	12	12	12

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 2 - 51 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Home cage observation Period : F0 lactation

Generation : F0 Sex : Female Day : 6 Dose : EES 15 mg/kg Species : Rat

Animal No.	Posture	Convulsion	Abnormal behavior
3101	N	0	0
3103	N	0	0
3104	N	0	0
3106	N	0	0
3107	N	0	0
3108	N	0	0
3109	N	0	0
3110	N	0	0
3111	N	0	0
3112	N	0	0
n	10	10	10

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 2 - 52 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Home cage observation Period : F0 lactation

Generation : F0 Sex : Female Day : 6 Dose : EES 50 mg/kg Species : Rat

Animal No.	Posture	Convulsion	Abnormal behavior
4101	N	0	0
4103	N	0	0
4104	N	0	0
4105	N	0	0
4106	N	0	0
4107	N	0	0
4108	N	0	0
4109	N	0	0
4110	N	0	0
4111	N	0	0
4112	N	0	0
n	11	11	11

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 2 - 53 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Home cage observation Period : F0 lactation

Generation : F0 Sex : Female Day : 13 Dose : EES 0 mg/kg Species : Rat

Animal No.	Posture	Convulsion	Abnormal behavior
1101	N	0	0
1102	N	0	0
1103	N	0	0
1104	N	0	0
1105	N	0	0
1106	N	0	0
1107	N	0	0
1108	N	0	0
1109	N	0	0
1110	N	0	0
1111	N	0	0
n	11	11	11

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 2 - 54 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Home cage observation Period : F0 lactation

Generation : F0 Sex : Female Day : 13 Dose : EES 5 mg/kg Species : Rat

Animal No.	Posture	Convulsion	Abnormal behavior
2101	N	0	0
2102	N	0	0
2103	N	0	0
2104	N	0	0
2105	N	0	0
2106	N	0	0
2107	N	0	0
2108	N	0	0
2109	N	0	0
2110	N	0	0
2111	N	0	0
2112	N	0	0
n	12	12	12

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 2 - 55 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Home cage observation Period : F0 lactation

Generation : F0 Sex : Female Day : 13 Dose : EES 15 mg/kg Species : Rat

Animal No.	Posture	Convulsion	Abnormal behavior
3101	N	0	0
3103	N	0	0
3104	N	0	0
3106	N	0	0
3107	N	0	0
3108	N	0	0
3109	N	0	0
3110	N	0	0
3111	N	0	0
3112	N	0	0
n	10	10	10

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Home cage observation

Period : F0 lactation

Generation : F0 Sex : Female Day : 13 Dose : EES 50 mg/kg Species : Rat

Animal No.	Posture	Convulsion	Abnormal behavior
4101	N	0	0
4103	N	0	0
4104	N	0	0
4105	N	0	0
4106	N	0	0
4107	N	0	0
4108	N	0	0
4109	N	0	0
4110	N	0	0
4111	N	0	0
4112	N	0	0
n	11	11	11

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 2 - 57 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Home cage observation Period : Administration (non-mating group)

Generation : F0 Sex : Female Week : 1 Dose : EES 0 mg/kg Species : Rat

Animal No.	Posture	Convulsion	Abnormal behavior
5101	N	0	0
5102	N	0	0
5103	N	0	0
5104	N	0	0
5105	N	0	0
5106	N	0	0
5107	N	0	0
5108	N	0	0
5109	N	0	0
5110	N	0	0
n	10	10	10

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 2 - 58 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Home cage observation Period : Administration (non-mating group)

Generation : F0 Sex : Female Week : 1 Dose : EES 50 mg/kg Species : Rat

Animal No.	Posture	Convulsion	Abnormal behavior
6101	N	0	0
6102	N	0	0
6103	N	0	0
6104	N	0	0
6105	N	0	0
6106	N	0	0
6107	N	0	0
6108	N	0	0
6109	N	0	0
6110	N	0	0
n	10	10	10

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 2 - 59 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Home cage observation Period : Administration (non-mating group)

Generation : F0 Sex : Female Week : 2 Dose : EES 0 mg/kg Species : Rat

Animal No.	Posture	Convulsion	Abnormal behavior
5101	N	0	0
5102	N	0	0
5103	N	0	0
5104	N	0	0
5105	N	0	0
5106	N	0	0
5107	N	0	0
5108	N	0	0
5109	N	0	0
5110	N	0	0
n	10	10	10

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 2 - 60 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Home cage observation Period : Administration (non-mating group)

Generation : F0 Sex : Female Week : 2 Dose : EES 50 mg/kg Species : Rat

Animal No.	Posture	Convulsion	Abnormal behavior
6101	N	0	0
6102	N	0	0
6103	N	0	0
6104	N	0	0
6105	N	0	0
6106	N	0	0
6107	N	0	0
6108	N	0	0
6109	N	0	0
6110	N	0	0
n	10	10	10

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 2 - 61 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Home cage observation Period : Administration (non-mating group)

Generation : F0 Sex : Female Week : 3 Dose : EES 0 mg/kg Species : Rat

Animal No.	Posture	Convulsion	Abnormal behavior
5101	N	0	0
5102	N	0	0
5103	N	0	0
5104	N	0	0
5105	N	0	0
5106	N	0	0
5107	N	0	0
5108	N	0	0
5109	N	0	0
5110	N	0	0
n	10	10	10

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 2 - 62 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Home cage observation Period : Administration (non-mating group)

Generation : F0 Sex : Female Week : 3 Dose : EES 50 mg/kg Species : Rat

Animal No.	Posture	Convulsion	Abnormal behavior
6101	N	0	0
6102	N	0	0
6103	N	0	0
6104	N	0	0
6105	N	0	0
6106	N	0	0
6107	N	0	0
6108	N	0	0
6109	N	0	0
6110	N	0	0
n	10	10	10

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Study No. : R-1244

Home cage observation

Period : Administration (non-mating group)

Generation : F0 Sex : Female Week : 4 Dose : EES 0 mg/kg Species : Rat

Animal No.	Posture	Convulsion	Abnormal behavior
5101	N	0	0
5102	N	0	0
5103	N	0	0
5104	N	0	0
5105	N	0	0
5106	N	0	0
5107	N	0	0
5108	N	0	0
5109	N	0	0
5110	N	0	0
n	10	10	10

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 2 - 64 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Home cage observation Period : Administration (non-mating group)

Generation : F0 Sex : Female Week : 4 Dose : EES 50 mg/kg Species : Rat

Animal No.	Posture	Convulsion	Abnormal behavior
6101	N	0	0
6102	N	0	0
6103	N	0	0
6104	N	0	0
6105	N	0	0
6106	N	0	0
6107	N	0	0
6108	N	0	0
6109	N	0	0
6110	N	0	0
n	10	10	10

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Study No. : R-1244

Home cage observation

Period : Administration (non-mating group)

Generation : F0 Sex : Female Week : 5 Dose : EES 0 mg/kg Species : Rat

Animal No.	Posture	Convulsion	Abnormal behavior
5101	N	0	0
5102	N	0	0
5103	N	0	0
5104	N	0	0
5105	N	0	0
5106	N	0	0
5107	N	0	0
5108	N	0	0
5109	N	0	0
5110	N	0	0
n	10	10	10

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Home cage observation

Period : Administration (non-mating group)

Generation : F0 Sex : Female Week : 5 Dose : EES 50 mg/kg Species : Rat

Animal No.	Posture	Convulsion	Abnormal behavior
6101	N	0	0
6102	N	0	0
6103	N	0	0
6104	N	0	0
6105	N	0	0
6106	N	0	0
6107	N	0	0
6108	N	0	0
6109	N	0	0
6110	N	0	0
n	10	10	10

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 2 - 67 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Home cage observation Period : Administration (non-mating group)

Generation : F0 Sex : Female Week : 6 Dose : EES 0 mg/kg Species : Rat

Animal No.	Posture	Convulsion	Abnormal behavior
5101	N	0	0
5102	N	0	0
5103	N	0	0
5104	N	0	0
5105	N	0	0
5106	N	0	0
5107	N	0	0
5108	N	0	0
5109	N	0	0
5110	N	0	0
n	10	10	10

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 2 - 68 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Home cage observation Period : Administration (non-mating group)

Generation : F0 Sex : Female Week : 6 Dose : EES 50 mg/kg Species : Rat

Animal No.	Posture	Convulsion	Abnormal behavior
6101	N	0	0
6102	N	0	0
6103	N	0	0
6104	N	0	0
6105	N	0	0
6106	N	0	0
6107	N	0	0
6108	N	0	0
6109	N	0	0
6110	N	0	0
n	10	10	10

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Study No. : R-1244

Home cage observation

Period : Recovery

Generation : F0 Sex : Male Week : 1 Dose : EES 0 mg/kg Species : Rat

Animal No.	Posture	Convulsion	Abnormal behavior
1008	N	0	0
1009	N	0	0
1010	N	0	0
1011	N	0	0
1012	N	0	0
n	5	5	5

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Home cage observation

Period : Recovery

Generation : F0 Sex : Male Week : 1 Dose : EES 50 mg/kg Species : Rat

Animal No.	Posture	Convulsion	Abnormal behavior
4008	N	0	0
4009	N	0	0
4010	N	0	0
4011	N	0	0
4012	N	0	0
n	5	5	5

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Home cage observation

Period : Recovery

Generation : F0 Sex : Male Week : 2 Dose : EES 0 mg/kg Species : Rat

Animal No.	Posture	Convulsion	Abnormal behavior
1008	N	0	0
1009	N	0	0
1010	N	0	0
1011	N	0	0
1012	N	0	0
n	5	5	5

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Home cage observation

Period : Recovery

Generation : F0 Sex : Male Week : 2 Dose : EES 50 mg/kg Species : Rat

Animal No.	Posture	Convulsion	Abnormal behavior
4008	N	0	0
4009	N	0	0
4010	N	0	0
4011	N	0	0
4012	N	0	0
n	5	5	5

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 2 - 73 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Home cage observation Period : Recovery(non-mating group)

Generation : F0 Sex : Female Week : 1 Dose : EES 0 mg/kg Species : Rat

Animal No.	Posture	Convulsion	Abnormal behavior
5106	N	0	0
5107	N	0	0
5108	N	0	0
5109	N	0	0
5110	N	0	0
n	5	5	5

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 2 - 74 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Home cage observation Period : Recovery(non-mating group)

Generation : F0 Sex : Female Week : 1 Dose : EES 50 mg/kg Species : Rat

Animal No.	Posture	Convulsion	Abnormal behavior
6106	N	0	0
6107	N	0	0
6108	N	0	0
6109	N	0	0
6110	N	0	0
n	5	5	5

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Home cage observation

Period : Recovery(non-mating group)

Generation : F0 Sex : Female Week : 2 Dose : EES 0 mg/kg Species : Rat

Animal No.	Posture	Convulsion	Abnormal behavior
5106	N	0	0
5107	N	0	0
5108	N	0	0
5109	N	0	0
5110	N	0	0
n	5	5	5

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 2 - 76 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Home cage observation Period : Recovery(non-mating group)

Generation : F0 Sex : Female Week : 2 Dose : EES 50 mg/kg Species : Rat

Animal No.	Posture	Convulsion	Abnormal behavior
6106	N	0	0
6107	N	0	0
6108	N	0	0
6109	N	0	0
6110	N	0	0
n	5	5	5

Posture) N: Normal, F: Flattened, H: Hunched
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

In-the-hand observation
Generation : F0 Sex : Male Week : 1 Period : F0 before mating
Dose : EES 0 mg/kg Species : Rat

Animal No.	Ease of removal from cage	Fur condition	Skin	Secretions-Eye, Nose	Exophthalmos	Palpebral closure	Mucosal membranes	Lacrimation
1001	0	0	0	0	0	0	0	0
1002	0	0	0	0	0	0	0	0
1003	0	0	0	0	0	0	0	0
1004	0	0	0	0	0	0	0	0
1005	0	0	0	0	0	0	0	0
1006	0	0	0	0	0	0	0	0
1007	0	0	0	0	0	0	0	0
1008	0	0	0	0	0	0	0	0
1009	0	0	0	0	0	0	0	0
1010	0	0	0	0	0	0	0	0
1011	0	0	0	0	0	0	0	0
1012	0	0	0	0	0	0	0	0
n	12	12	12	12	12	12	12	12

Animal No.	Piloerection	Pupil size	Salivation	Abnormal respiration	Vocalization	Reactivity to handling
1001	0	0	0	0	0	0
1002	0	0	0	0	0	0
1003	0	0	0	0	0	0
1004	0	0	0	0	0	0
1005	0	0	0	0	0	0
1006	0	0	0	0	0	0
1007	0	0	0	0	0	0
1008	0	0	0	0	0	0
1009	0	0	0	0	0	0
1010	0	0	0	0	0	0
1011	0	0	0	0	0	0
1012	0	0	0	0	0	0
n	12	12	12	12	12	12

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

In-the-hand observation
Generation : F0 Sex : Male Week : 1 Period : F0 before mating
Dose : EES 5 mg/kg Species : Rat

Animal No.	Ease of removal from cage	Fur condition	Skin	Secretions-Eye, Nose	Exophthalmos	Palpebral closure	Mucosal membranes	Lacrimation
2001	0	0	0	0	0	0	0	0
2002	0	0	0	0	0	0	0	0
2003	0	0	0	0	0	0	0	0
2004	0	0	0	0	0	0	0	0
2005	0	0	0	0	0	0	0	0
2006	0	0	0	0	0	0	0	0
2007	0	0	0	0	0	0	0	0
2008	0	0	0	0	0	0	0	0
2009	0	0	0	0	0	0	0	0
2010	0	0	0	0	0	0	0	0
2011	0	0	0	0	0	0	0	0
2012	0	0	0	0	0	0	0	0
n	12	12	12	12	12	12	12	12

Animal No.	Piloerection	Pupil size	Salivation	Abnormal respiration	Vocalization	Reactivity to handling
2001	0	0	0	0	0	0
2002	0	0	0	0	0	0
2003	0	0	0	0	0	0
2004	0	0	0	0	0	0
2005	0	0	0	0	0	0
2006	0	0	0	0	0	0
2007	0	0	0	0	0	0
2008	0	0	0	0	0	0
2009	0	0	0	0	0	0
2010	0	0	0	0	0	0
2011	0	0	0	0	0	0
2012	0	0	0	0	0	0
n	12	12	12	12	12	12

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

In-the-hand observation
Generation : F0 Sex : Male Week : 1 Period : F0 before mating
Dose : EES 15 mg/kg Species : Rat

Animal No.	Ease of removal from cage	Fur condition	Skin	Secretions-Eye, Nose	Exophthalmos	Palpebral closure	Mucosal membranes	Lacrimation
3001	0	0	0	0	0	0	0	0
3002	0	0	0	0	0	0	0	0
3003	0	0	0	0	0	0	0	0
3004	0	0	0	0	0	0	0	0
3005	0	0	0	0	0	0	0	0
3006	0	0	0	0	0	0	0	0
3007	0	0	0	0	0	0	0	0
3008	0	0	0	0	0	0	0	0
3009	0	0	0	0	0	0	0	0
3010	0	0	0	0	0	0	0	0
3011	0	0	0	0	0	0	0	0
3012	0	0	0	0	0	0	0	0
n	12	12	12	12	12	12	12	12

Animal No.	Piloerection	Pupil size	Salivation	Abnormal respiration	Vocalization	Reactivity to handling
3001	0	0	0	0	0	0
3002	0	0	0	0	0	0
3003	0	0	0	0	0	0
3004	0	0	0	0	0	0
3005	0	0	0	0	0	0
3006	0	0	0	0	0	0
3007	0	0	0	0	0	0
3008	0	0	0	0	0	0
3009	0	0	0	0	0	0
3010	0	0	0	0	0	0
3011	0	0	0	0	0	0
3012	0	0	0	0	0	0
n	12	12	12	12	12	12

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

In-the-hand observation
Generation : F0 Sex : Male Week : 1 Period : F0 before mating
Dose : EES 50 mg/kg Species : Rat

Animal No.	Ease of removal from cage	Fur condition	Skin	Secretions-Eye, Nose	Exophthalmos	Palpebral closure	Mucosal membranes	Lacrimation
4001	0	0	0	0	0	0	0	0
4002	0	0	0	0	0	0	0	0
4003	0	0	0	0	0	0	0	0
4004	0	0	0	0	0	0	0	0
4005	0	0	0	0	0	0	0	0
4006	0	0	0	0	0	0	0	0
4007	0	0	0	0	0	0	0	0
4008	0	0	0	0	0	0	0	0
4009	0	0	0	0	0	0	0	0
4010	0	0	0	0	0	0	0	0
4011	0	0	0	0	0	0	0	0
4012	0	0	0	0	0	0	0	0
n	12	12	12	12	12	12	12	12

Animal No.	Piloerection	Pupil size	Salivation	Abnormal respiration	Vocalization	Reactivity to handling
4001	0	0	0	0	0	0
4002	0	0	0	0	0	0
4003	0	0	0	0	0	0
4004	0	0	0	0	0	0
4005	0	0	0	0	0	0
4006	0	0	0	0	0	0
4007	0	0	0	0	0	0
4008	0	0	0	0	0	0
4009	0	0	0	0	0	0
4010	0	0	0	0	0	0
4011	0	0	0	0	0	0
4012	0	0	0	0	0	0
n	12	12	12	12	12	12

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

In-the-hand observation
Generation : F0 Sex : Male Week : 2 Period : F0 before mating
Dose : EES 0 mg/kg Species : Rat

Animal No.	Ease of removal from cage	Fur condition	Skin	Secretions-Eye, Nose	Exophthalmos	Palpebral closure	Mucosal membranes	Lacrimation
1001	0	0	0	0	0	0	0	0
1002	0	0	0	0	0	0	0	0
1003	0	0	0	0	0	0	0	0
1004	0	0	0	0	0	0	0	0
1005	0	0	0	0	0	0	0	0
1006	0	0	0	0	0	0	0	0
1007	0	0	0	0	0	0	0	0
1008	0	0	0	0	0	0	0	0
1009	0	0	0	0	0	0	0	0
1010	0	0	0	0	0	0	0	0
1011	0	0	0	0	0	0	0	0
1012	0	0	0	0	0	0	0	0
n	12	12	12	12	12	12	12	12

Animal No.	Piloerection	Pupil size	Salivation	Abnormal respiration	Vocalization	Reactivity to handling
1001	0	0	0	0	0	0
1002	0	0	0	0	0	0
1003	0	0	0	0	0	0
1004	0	0	0	0	0	0
1005	0	0	0	0	0	0
1006	0	0	0	0	0	0
1007	0	0	0	0	0	0
1008	0	0	0	0	0	0
1009	0	0	0	0	0	0
1010	0	0	0	0	0	0
1011	0	0	0	0	0	0
1012	0	0	0	0	0	0
n	12	12	12	12	12	12

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

In-the-hand observation
Generation : F0 Sex : Male Week : 2 Period : F0 before mating
Dose : EES 5 mg/kg Species : Rat

Animal No.	Ease of removal from cage	Fur condition	Skin	Secretions-Eye, Nose	Exophthalmos	Palpebral closure	Mucosal membranes	Lacrimation
2001	0	0	0	0	0	0	0	0
2002	0	0	0	0	0	0	0	0
2003	0	0	0	0	0	0	0	0
2004	0	0	0	0	0	0	0	0
2005	0	0	0	0	0	0	0	0
2006	0	0	0	0	0	0	0	0
2007	0	0	0	0	0	0	0	0
2008	0	0	0	0	0	0	0	0
2009	0	0	0	0	0	0	0	0
2010	0	0	0	0	0	0	0	0
2011	0	0	0	0	0	0	0	0
2012	0	0	0	0	0	0	0	0
n	12	12	12	12	12	12	12	12

Animal No.	Piloerection	Pupil size	Salivation	Abnormal respiration	Vocalization	Reactivity to handling
2001	0	0	0	0	0	0
2002	0	0	0	0	0	0
2003	0	0	0	0	0	0
2004	0	0	0	0	0	0
2005	0	0	0	0	0	0
2006	0	0	0	0	0	0
2007	0	0	0	0	0	0
2008	0	0	0	0	0	0
2009	0	0	0	0	0	0
2010	0	0	0	0	0	0
2011	0	0	0	0	0	0
2012	0	0	0	0	0	0
n	12	12	12	12	12	12

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

In-the-hand observation
Generation : F0 Sex : Male Week : 2 Period : F0 before mating
Dose : EES 15 mg/kg Species : Rat

Animal No.	Ease of removal from cage	Fur condition	Skin	Secretions-Eye, Nose	Exophthalmos	Palpebral closure	Mucosal membranes	Lacrimation
3001	0	0	0	0	0	0	0	0
3002	0	0	0	0	0	0	0	0
3003	0	0	0	0	0	0	0	0
3004	0	0	0	0	0	0	0	0
3005	0	0	0	0	0	0	0	0
3006	0	0	0	0	0	0	0	0
3007	0	0	0	0	0	0	0	0
3008	0	0	0	0	0	0	0	0
3009	0	0	0	0	0	0	0	0
3010	0	0	0	0	0	0	0	0
3011	0	0	0	0	0	0	0	0
3012	0	0	0	0	0	0	0	0
n	12	12	12	12	12	12	12	12

Animal No.	Piloerection	Pupil size	Salivation	Abnormal respiration	Vocalization	Reactivity to handling
3001	0	0	0	0	0	0
3002	0	0	0	0	0	0
3003	0	0	0	0	0	0
3004	0	0	0	0	0	0
3005	0	0	0	0	0	0
3006	0	0	0	0	0	0
3007	0	0	0	0	0	0
3008	0	0	0	0	0	0
3009	0	0	0	0	0	0
3010	0	0	0	0	0	0
3011	0	0	0	0	0	0
3012	0	0	0	0	0	0
n	12	12	12	12	12	12

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

In-the-hand observation
Generation : F0 Sex : Male Week : 2 Period : F0 before mating
Dose : EES 50 mg/kg Species : Rat

Animal No.	Ease of removal from cage	Fur condition	Skin	Secretions-Eye, Nose	Exophthalmos	Palpebral closure	Mucosal membranes	Lacrimation
4001	0	0	0	0	0	0	0	0
4002	0	0	0	0	0	0	0	0
4003	0	0	0	0	0	0	0	0
4004	0	0	0	0	0	0	0	0
4005	0	0	0	0	0	0	0	0
4006	0	0	0	0	0	0	0	0
4007	0	0	0	0	0	0	0	0
4008	0	0	0	0	0	0	0	0
4009	0	0	0	0	0	0	0	0
4010	0	0	0	0	0	0	0	0
4011	0	0	0	0	0	0	0	0
4012	0	0	0	0	0	0	0	0
n	12	12	12	12	12	12	12	12

Animal No.	Piloerection	Pupil size	Salivation	Abnormal respiration	Vocalization	Reactivity to handling
4001	0	0	0	0	0	0
4002	0	0	0	0	0	0
4003	0	0	0	0	0	0
4004	0	0	0	0	0	0
4005	0	0	0	0	0	0
4006	0	0	0	0	0	0
4007	0	0	0	0	0	0
4008	0	0	0	0	0	0
4009	0	0	0	0	0	0
4010	0	0	0	0	0	0
4011	0	0	0	0	0	0
4012	0	0	0	0	0	0
n	12	12	12	12	12	12

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

In-the-hand observation
Generation : F0 Sex : Male Week : 3 Period : F0 mating
Dose : EES 0 mg/kg Species : Rat

Animal No.	Ease of removal from cage	Fur condition	Skin	Secretions-Eye, Nose	Exophthalmos	Palpebral closure	Mucosal membranes	Lacrimation
1001	0	0	0	0	0	0	0	0
1002	0	0	0	0	0	0	0	0
1003	0	0	0	0	0	0	0	0
1004	0	0	0	0	0	0	0	0
1005	0	0	0	0	0	0	0	0
1006	0	0	0	0	0	0	0	0
1007	0	0	0	0	0	0	0	0
1008	0	0	0	0	0	0	0	0
1009	0	0	0	0	0	0	0	0
1010	0	0	0	0	0	0	0	0
1011	0	0	0	0	0	0	0	0
1012	0	0	0	0	0	0	0	0
n	12	12	12	12	12	12	12	12

Animal No.	Piloerection	Pupil size	Salivation	Abnormal respiration	Vocalization	Reactivity to handling
1001	0	0	0	0	0	0
1002	0	0	0	0	0	0
1003	0	0	0	0	0	0
1004	0	0	0	0	0	0
1005	0	0	0	0	0	0
1006	0	0	0	0	0	0
1007	0	0	0	0	0	0
1008	0	0	0	0	0	0
1009	0	0	0	0	0	0
1010	0	0	0	0	0	0
1011	0	0	0	0	0	0
1012	0	0	0	0	0	0
n	12	12	12	12	12	12

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

In-the-hand observation
Generation : F0 Sex : Male Week : 3 Period : F0 mating
Dose : EES 5 mg/kg Species : Rat

Animal No.	Ease of removal from cage	Fur condition	Skin	Secretions-Eye, Nose	Exophthalmos	Palpebral closure	Mucosal membranes	Lacrimation
2001	0	0	0	0	0	0	0	0
2002	0	0	0	0	0	0	0	0
2003	0	0	0	0	0	0	0	0
2004	0	0	0	0	0	0	0	0
2005	0	0	0	0	0	0	0	0
2006	0	0	0	0	0	0	0	0
2007	0	0	0	0	0	0	0	0
2008	0	0	0	0	0	0	0	0
2009	0	0	0	0	0	0	0	0
2010	0	0	0	0	0	0	0	0
2011	0	0	0	0	0	0	0	0
2012	0	0	0	0	0	0	0	0
n	12	12	12	12	12	12	12	12

Animal No.	Piloerection	Pupil size	Salivation	Abnormal respiration	Vocalization	Reactivity to handling
2001	0	0	0	0	0	0
2002	0	0	0	0	0	0
2003	0	0	0	0	0	0
2004	0	0	0	0	0	0
2005	0	0	0	0	0	0
2006	0	0	0	0	0	0
2007	0	0	0	0	0	0
2008	0	0	0	0	0	0
2009	0	0	0	0	0	0
2010	0	0	0	0	0	0
2011	0	0	0	0	0	0
2012	0	0	0	0	0	0
n	12	12	12	12	12	12

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

In-the-hand observation
Generation : F0 Sex : Male Week : 3 Period : F0 mating
Dose : EES 15 mg/kg Species : Rat

Animal No.	Ease of removal from cage	Fur condition	Skin	Secretions-Eye, Nose	Exophthalmos	Palpebral closure	Mucosal membranes	Lacrimation
3001	0	0	0	0	0	0	0	0
3002	0	0	0	0	0	0	0	0
3003	0	0	0	0	0	0	0	0
3004	0	0	0	0	0	0	0	0
3005	0	0	0	0	0	0	0	0
3006	0	0	0	0	0	0	0	0
3007	0	0	0	0	0	0	0	0
3008	0	0	0	0	0	0	0	0
3009	0	0	0	0	0	0	0	0
3010	0	0	0	0	0	0	0	0
3011	0	0	0	0	0	0	0	0
3012	0	0	0	0	0	0	0	0
n	12	12	12	12	12	12	12	12

Animal No.	Piloerection	Pupil size	Salivation	Abnormal respiration	Vocalization	Reactivity to handling
3001	0	0	0	0	0	0
3002	0	0	0	0	0	0
3003	0	0	0	0	0	0
3004	0	0	0	0	0	0
3005	0	0	0	0	0	0
3006	0	0	0	0	0	0
3007	0	0	0	0	0	0
3008	0	0	0	0	0	0
3009	0	0	0	0	0	0
3010	0	0	0	0	0	0
3011	0	0	0	0	0	0
3012	0	0	0	0	0	0
n	12	12	12	12	12	12

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

In-the-hand observation
Generation : F0 Sex : Male Week : 3 Period : F0 mating
Dose : EES 50 mg/kg Species : Rat

Animal No.	Ease of removal from cage	Fur condition	Skin	Secretions-Eye, Nose	Exophthalmos	Palpebral closure	Mucosal membranes	Lacrimation
4001	0	0	0	0	0	0	0	0
4002	0	0	0	0	0	0	0	0
4003	0	0	0	0	0	0	0	0
4004	0	0	0	0	0	0	0	0
4005	0	0	0	0	0	0	0	0
4006	0	0	0	0	0	0	0	0
4007	0	0	0	0	0	0	0	0
4008	0	0	0	0	0	0	0	0
4009	0	0	0	0	0	0	0	0
4010	0	0	0	0	0	0	0	0
4011	0	0	0	0	0	0	0	0
4012	0	0	0	0	0	0	0	0
n	12	12	12	12	12	12	12	12

Animal No.	Piloerection	Pupil size	Salivation	Abnormal respiration	Vocalization	Reactivity to handling
4001	0	0	0	0	0	0
4002	0	0	0	0	0	0
4003	0	0	0	0	0	0
4004	0	0	0	0	0	0
4005	0	0	0	0	0	0
4006	0	0	0	0	0	0
4007	0	0	0	0	0	0
4008	0	0	0	0	0	0
4009	0	0	0	0	0	0
4010	0	0	0	0	0	0
4011	0	0	0	0	0	0
4012	0	0	0	0	0	0
n	12	12	12	12	12	12

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

In-the-hand observation
Generation : F0 Sex : Male Week : 4 Period : F0 mating
Dose : EES 0 mg/kg Species : Rat

Animal No.	Ease of removal from cage	Fur condition	Skin	Secretions-Eye, Nose	Exophthalmos	Palpebral closure	Mucosal membranes	Lacrimation
1001	0	0	0	0	0	0	0	0
1002	0	0	0	0	0	0	0	0
1003	0	0	0	0	0	0	0	0
1004	0	0	0	0	0	0	0	0
1005	0	0	0	0	0	0	0	0
1006	0	0	0	0	0	0	0	0
1007	0	0	0	0	0	0	0	0
1008	0	0	0	0	0	0	0	0
1009	0	0	0	0	0	0	0	0
1010	0	0	0	0	0	0	0	0
1011	0	0	0	0	0	0	0	0
1012	0	0	0	0	0	0	0	0
n	12	12	12	12	12	12	12	12

Animal No.	Piloerection	Pupil size	Salivation	Abnormal respiration	Vocalization	Reactivity to handling
1001	0	0	0	0	0	0
1002	0	0	0	0	0	0
1003	0	0	0	0	0	0
1004	0	0	0	0	0	0
1005	0	0	0	0	0	0
1006	0	0	0	0	0	0
1007	0	0	0	0	0	0
1008	0	0	0	0	0	0
1009	0	0	0	0	0	0
1010	0	0	0	0	0	0
1011	0	0	0	0	0	0
1012	0	0	0	0	0	0
n	12	12	12	12	12	12

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

In-the-hand observation
Generation : F0 Sex : Male Week : 4 Period : F0 mating
Dose : EES 5 mg/kg Species : Rat

Animal No.	Ease of removal from cage	Fur condition	Skin	Secretions-Eye, Nose	Exophthalmos	Palpebral closure	Mucosal membranes	Lacrimation
2001	0	0	0	0	0	0	0	0
2002	0	0	0	0	0	0	0	0
2003	0	0	0	0	0	0	0	0
2004	0	0	0	0	0	0	0	0
2005	0	0	0	0	0	0	0	0
2006	0	0	0	0	0	0	0	0
2007	0	0	0	0	0	0	0	0
2008	0	0	0	0	0	0	0	0
2009	0	0	0	0	0	0	0	0
2010	0	0	0	0	0	0	0	0
2011	0	0	0	0	0	0	0	0
2012	0	0	0	0	0	0	0	0
n	12	12	12	12	12	12	12	12

Animal No.	Piloerection	Pupil size	Salivation	Abnormal respiration	Vocalization	Reactivity to handling
2001	0	0	0	0	0	0
2002	0	0	0	0	0	0
2003	0	0	0	0	0	0
2004	0	0	0	0	0	0
2005	0	0	0	0	0	0
2006	0	0	0	0	0	0
2007	0	0	0	0	0	0
2008	0	0	0	0	0	0
2009	0	0	0	0	0	0
2010	0	0	0	0	0	0
2011	0	0	0	0	0	0
2012	0	0	0	0	0	0
n	12	12	12	12	12	12

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

In-the-hand observation
Generation : F0 Sex : Male Week : 4 Period : F0 mating
Dose : EES 15 mg/kg Species : Rat

Animal No.	Ease of removal from cage	Fur condition	Skin	Secretions-Eye, Nose	Exophthalmos	Palpebral closure	Mucosal membranes	Lacrimation
3001	0	0	0	0	0	0	0	0
3002	0	0	0	0	0	0	0	0
3003	0	0	0	0	0	0	0	0
3004	0	0	0	0	0	0	0	0
3005	0	0	0	0	0	0	0	0
3006	0	0	0	0	0	0	0	0
3007	0	0	0	0	0	0	0	0
3008	0	0	0	0	0	0	0	0
3009	0	0	0	0	0	0	0	0
3010	0	0	0	0	0	0	0	0
3011	0	0	0	0	0	0	0	0
3012	0	0	0	0	0	0	0	0
n	12	12	12	12	12	12	12	12

Animal No.	Piloerection	Pupil size	Salivation	Abnormal respiration	Vocalization	Reactivity to handling
3001	0	0	0	0	0	0
3002	0	0	0	0	0	0
3003	0	0	0	0	0	0
3004	0	0	0	0	0	0
3005	0	0	0	0	0	0
3006	0	0	0	0	0	0
3007	0	0	0	0	0	0
3008	0	0	0	0	0	0
3009	0	0	0	0	0	0
3010	0	0	0	0	0	0
3011	0	0	0	0	0	0
3012	0	0	0	0	0	0
n	12	12	12	12	12	12

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
EES: Ethyl ethyldimethyltetradecylammonium sulphate

In-the-hand observation Period : F0 mating
Generation : F0 Sex : Male Week : 4 Dose : EES 50 mg/kg Species : Rat

Animal No.	Ease of removal from cage	Fur condition	Skin	Secretions-Eye, Nose	Exophthalmos	Palpebral closure	Mucosal membranes	Lacrimation
4001	0	0	0	0	0	0	0	0
4002	0	0	0	0	0	0	0	0
4003	0	0	0	0	0	0	0	0
4004	0	0	0	0	0	0	0	0
4005	0	0	0	0	0	0	0	0
4006	0	0	0	0	0	0	0	0
4007	0	0	0	0	0	0	0	0
4008	0	0	0	0	0	0	0	0
4009	0	0	0	0	0	0	0	0
4010	0	0	0	0	0	0	0	0
4011	0	0	0	0	0	0	0	0
4012	0	0	0	0	0	0	0	0
n	12	12	12	12	12	12	12	12

Animal No.	Piloerection	Pupil size	Salivation	Abnormal respiration	Vocalization	Reactivity to handling
4001	0	0	0	0	0	0
4002	0	0	0	0	0	0
4003	0	0	0	0	0	0
4004	0	0	0	0	0	0
4005	0	0	0	0	0	0
4006	0	0	0	0	0	0
4007	0	0	0	0	0	0
4008	0	0	0	0	0	0
4009	0	0	0	0	0	0
4010	0	0	0	0	0	0
4011	0	0	0	0	0	0
4012	0	0	0	0	0	0
n	12	12	12	12	12	12

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

In-the-hand observation
Generation : F0 Sex : Male Week : 5 Period : F0 mating
Dose : EES 0 mg/kg Species : Rat

Animal No.	Ease of removal from cage	Fur condition	Skin	Secretions-Eye, Nose	Exophthalmos	Palpebral closure	Mucosal membranes	Lacrimation
1001	0	0	0	0	0	0	0	0
1002	0	0	0	0	0	0	0	0
1003	0	0	0	0	0	0	0	0
1004	0	0	0	0	0	0	0	0
1005	0	0	0	0	0	0	0	0
1006	0	0	0	0	0	0	0	0
1007	0	0	0	0	0	0	0	0
1008	0	0	0	0	0	0	0	0
1009	0	0	0	0	0	0	0	0
1010	0	0	0	0	0	0	0	0
1011	0	0	0	0	0	0	0	0
1012	0	0	0	0	0	0	0	0
n	12	12	12	12	12	12	12	12

Animal No.	Piloerection	Pupil size	Salivation	Abnormal respiration	Vocalization	Reactivity to handling
1001	0	0	0	0	0	0
1002	0	0	0	0	0	0
1003	0	0	0	0	0	0
1004	0	0	0	0	0	0
1005	0	0	0	0	0	0
1006	0	0	0	0	0	0
1007	0	0	0	0	0	0
1008	0	0	0	0	0	0
1009	0	0	0	0	0	0
1010	0	0	0	0	0	0
1011	0	0	0	0	0	0
1012	0	0	0	0	0	0
n	12	12	12	12	12	12

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

In-the-hand observation
Generation : F0 Sex : Male Week : 5 Period : F0 mating
Dose : EES 5 mg/kg Species : Rat

Animal No.	Ease of removal from cage	Fur condition	Skin	Secretions-Eye, Nose	Exophthalmos	Palpebral closure	Mucosal membranes	Lacrimation
2001	0	0	0	0	0	0	0	0
2002	0	0	0	0	0	0	0	0
2003	0	0	0	0	0	0	0	0
2004	0	0	0	0	0	0	0	0
2005	0	0	0	0	0	0	0	0
2006	0	0	0	0	0	0	0	0
2007	0	0	0	0	0	0	0	0
2008	0	0	0	0	0	0	0	0
2009	0	0	0	0	0	0	0	0
2010	0	0	0	0	0	0	0	0
2011	0	0	0	0	0	0	0	0
2012	0	0	0	0	0	0	0	0
n	12	12	12	12	12	12	12	12

Animal No.	Piloerection	Pupil size	Salivation	Abnormal respiration	Vocalization	Reactivity to handling
2001	0	0	0	0	0	0
2002	0	0	0	0	0	0
2003	0	0	0	0	0	0
2004	0	0	0	0	0	0
2005	0	0	0	0	0	0
2006	0	0	0	0	0	0
2007	0	0	0	0	0	0
2008	0	0	0	0	0	0
2009	0	0	0	0	0	0
2010	0	0	0	0	0	0
2011	0	0	0	0	0	0
2012	0	0	0	0	0	0
n	12	12	12	12	12	12

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

In-the-hand observation
Generation : F0 Sex : Male Week : 5 Period : F0 mating
Dose : EES 15 mg/kg Species : Rat

Animal No.	Ease of removal from cage	Fur condition	Skin	Secretions-Eye, Nose	Exophthalmos	Palpebral closure	Mucosal membranes	Lacrimation
3001	0	0	0	0	0	0	0	0
3002	0	0	0	0	0	0	0	0
3003	0	0	0	0	0	0	0	0
3004	0	0	0	0	0	0	0	0
3005	0	0	0	0	0	0	0	0
3006	0	0	0	0	0	0	0	0
3007	0	0	0	0	0	0	0	0
3008	0	0	0	0	0	0	0	0
3009	0	0	0	0	0	0	0	0
3010	0	0	0	0	0	0	0	0
3011	0	0	0	0	0	0	0	0
3012	0	0	0	0	0	0	0	0
n	12	12	12	12	12	12	12	12

Animal No.	Piloerection	Pupil size	Salivation	Abnormal respiration	Vocalization	Reactivity to handling
3001	0	0	0	0	0	0
3002	0	0	0	0	0	0
3003	0	0	0	0	0	0
3004	0	0	0	0	0	0
3005	0	0	0	0	0	0
3006	0	0	0	0	0	0
3007	0	0	0	0	0	0
3008	0	0	0	0	0	0
3009	0	0	0	0	0	0
3010	0	0	0	0	0	0
3011	0	0	0	0	0	0
3012	0	0	0	0	0	0
n	12	12	12	12	12	12

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

In-the-hand observation
Generation : F0 Sex : Male Week : 5 Period : F0 mating
Dose : EES 50 mg/kg Species : Rat

Animal No.	Ease of removal from cage	Fur condition	Skin	Secretions-Eye, Nose	Exophthalmos	Palpebral closure	Mucosal membranes	Lacrimation
4001	0	0	0	0	0	0	0	0
4002	0	0	0	0	0	0	0	0
4003	0	0	0	0	0	0	0	0
4004	0	0	0	0	0	0	0	0
4005	0	0	0	0	0	0	0	0
4006	0	0	0	0	0	0	0	0
4007	0	0	0	0	0	0	0	0
4008	0	0	0	0	0	0	0	0
4009	0	0	0	0	0	0	0	0
4010	0	0	0	0	0	0	0	0
4011	0	0	0	0	0	0	0	0
4012	0	0	0	0	0	0	0	0
n	12	12	12	12	12	12	12	12

Animal No.	Piloerection	Pupil size	Salivation	Abnormal respiration	Vocalization	Reactivity to handling
4001	0	0	0	0	0	0
4002	0	0	0	0	0	0
4003	0	0	0	0	0	0
4004	0	0	0	0	0	0
4005	0	0	0	0	0	0
4006	0	0	0	0	0	0
4007	0	0	0	0	0	0
4008	0	0	0	0	0	0
4009	0	0	0	0	0	0
4010	0	0	0	0	0	0
4011	0	0	0	0	0	0
4012	0	0	0	0	0	0
n	12	12	12	12	12	12

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

In-the-hand observation
Generation : F0 Sex : Male Week : 6 Period : F0 mating
Dose : EES 0 mg/kg Species : Rat

Animal No.	Ease of removal from cage	Fur condition	Skin	Secretions-Eye, Nose	Exophthalmos	Palpebral closure	Mucosal membranes	Lacrimation
1001	0	0	0	0	0	0	0	0
1002	0	0	0	0	0	0	0	0
1003	0	0	0	0	0	0	0	0
1004	0	0	0	0	0	0	0	0
1005	0	0	0	0	0	0	0	0
1006	0	0	0	0	0	0	0	0
1007	0	0	0	0	0	0	0	0
1008	0	0	0	0	0	0	0	0
1009	0	0	0	0	0	0	0	0
1010	0	0	0	0	0	0	0	0
1011	0	0	0	0	0	0	0	0
1012	0	0	0	0	0	0	0	0
n	12	12	12	12	12	12	12	12

Animal No.	Piloerection	Pupil size	Salivation	Abnormal respiration	Vocalization	Reactivity to handling
1001	0	0	0	0	0	0
1002	0	0	0	0	0	0
1003	0	0	0	0	0	0
1004	0	0	0	0	0	0
1005	0	0	0	0	0	0
1006	0	0	0	0	0	0
1007	0	0	0	0	0	0
1008	0	0	0	0	0	0
1009	0	0	0	0	0	0
1010	0	0	0	0	0	0
1011	0	0	0	0	0	0
1012	0	0	0	0	0	0
n	12	12	12	12	12	12

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

In-the-hand observation
Generation : F0 Sex : Male Week : 6 Period : F0 mating
Dose : EES 5 mg/kg Species : Rat

Animal No.	Ease of removal from cage	Fur condition	Skin	Secretions-Eye, Nose	Exophthalmos	Palpebral closure	Mucosal membranes	Lacrimation
2001	0	0	0	0	0	0	0	0
2002	0	0	0	0	0	0	0	0
2003	0	0	0	0	0	0	0	0
2004	0	0	0	0	0	0	0	0
2005	0	0	0	0	0	0	0	0
2006	0	0	0	0	0	0	0	0
2007	0	0	0	0	0	0	0	0
2008	0	0	0	0	0	0	0	0
2009	0	0	0	0	0	0	0	0
2010	0	0	0	0	0	0	0	0
2011	0	0	0	0	0	0	0	0
2012	0	0	0	0	0	0	0	0
n	12	12	12	12	12	12	12	12

Animal No.	Piloerection	Pupil size	Salivation	Abnormal respiration	Vocalization	Reactivity to handling
2001	0	0	0	0	0	0
2002	0	0	0	0	0	0
2003	0	0	0	0	0	0
2004	0	0	0	0	0	0
2005	0	0	0	0	0	0
2006	0	0	0	0	0	0
2007	0	0	0	0	0	0
2008	0	0	0	0	0	0
2009	0	0	0	0	0	0
2010	0	0	0	0	0	0
2011	0	0	0	0	0	0
2012	0	0	0	0	0	0
n	12	12	12	12	12	12

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

In-the-hand observation
Generation : F0 Sex : Male Week : 6 Period : F0 mating
Dose : EES 15 mg/kg Species : Rat

Animal No.	Ease of removal from cage	Fur condition	Skin	Secretions-Eye, Nose	Exophthalmos	Palpebral closure	Mucosal membranes	Lacrimation
3001	0	0	0	0	0	0	0	0
3002	0	0	0	0	0	0	0	0
3003	0	0	0	0	0	0	0	0
3004	0	0	0	0	0	0	0	0
3005	0	0	0	0	0	0	0	0
3006	0	0	0	0	0	0	0	0
3007	0	0	0	0	0	0	0	0
3008	0	0	0	0	0	0	0	0
3009	0	0	0	0	0	0	0	0
3010	0	0	0	0	0	0	0	0
3011	0	0	0	0	0	0	0	0
3012	0	0	0	0	0	0	0	0
n	12	12	12	12	12	12	12	12

Animal No.	Piloerection	Pupil size	Salivation	Abnormal respiration	Vocalization	Reactivity to handling
3001	0	0	0	0	0	0
3002	0	0	0	0	0	0
3003	0	0	0	0	0	0
3004	0	0	0	0	0	0
3005	0	0	0	0	0	0
3006	0	0	0	0	0	0
3007	0	0	0	0	0	0
3008	0	0	0	0	0	0
3009	0	0	0	0	0	0
3010	0	0	0	0	0	0
3011	0	0	0	0	0	0
3012	0	0	0	0	0	0
n	12	12	12	12	12	12

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

In-the-hand observation
Generation : F0 Sex : Male Week : 6 Period : F0 mating
Dose : EES 50 mg/kg Species : Rat

Animal No.	Ease of removal from cage	Fur condition	Skin	Secretions-Eye, Nose	Exophthalmos	Palpebral closure	Mucosal membranes	Lacrimation
4001	0	0	0	0	0	0	0	0
4002	0	0	0	0	0	0	0	0
4003	0	0	0	0	0	0	0	0
4004	0	0	0	0	0	0	0	0
4005	0	0	0	0	0	0	0	0
4006	0	0	0	0	0	0	0	0
4007	0	0	0	0	0	0	0	0
4008	0	0	0	0	0	0	0	0
4009	0	0	0	0	0	0	0	0
4010	0	0	0	0	0	0	0	0
4011	0	0	0	0	0	0	0	0
4012	0	0	0	0	0	0	0	0
n	12	12	12	12	12	12	12	12

Animal No.	Piloerection	Pupil size	Salivation	Abnormal respiration	Vocalization	Reactivity to handling
4001	0	0	0	0	0	0
4002	0	0	0	0	0	0
4003	0	0	0	0	0	0
4004	0	0	0	0	0	0
4005	0	0	0	0	0	0
4006	0	0	0	0	0	0
4007	0	0	0	0	0	0
4008	0	0	0	0	0	0
4009	0	0	0	0	0	0
4010	0	0	0	0	0	0
4011	0	0	0	0	0	0
4012	0	0	0	0	0	0
n	12	12	12	12	12	12

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

In-the-hand observation
Generation : F0 Sex : Female Week : 1 Period : F0 before mating
Dose : EES 0 mg/kg Species : Rat

Animal No.	Ease of removal from cage	Fur condition	Skin	Secretions-Eye, Nose	Exophthalmos	Palpebral closure	Mucosal membranes	Lacrimation
1101	0	0	0	0	0	0	0	0
1102	0	0	0	0	0	0	0	0
1103	0	0	0	0	0	0	0	0
1104	0	0	0	0	0	0	0	0
1105	0	0	0	0	0	0	0	0
1106	0	0	0	0	0	0	0	0
1107	0	0	0	0	0	0	0	0
1108	0	0	0	0	0	0	0	0
1109	0	0	0	0	0	0	0	0
1110	0	0	0	0	0	0	0	0
1111	0	0	0	0	0	0	0	0
1112	0	0	0	0	0	0	0	0
n	12	12	12	12	12	12	12	12

Animal No.	Piloerection	Pupil size	Salivation	Abnormal respiration	Vocalization	Reactivity to handling
1101	0	0	0	0	0	0
1102	0	0	0	0	0	0
1103	0	0	0	0	0	0
1104	0	0	0	0	0	0
1105	0	0	0	0	0	0
1106	0	0	0	0	0	0
1107	0	0	0	0	0	0
1108	0	0	0	0	0	0
1109	0	0	0	0	0	0
1110	0	0	0	0	0	0
1111	0	0	0	0	0	0
1112	0	0	0	0	0	0
n	12	12	12	12	12	12

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

In-the-hand observation
Generation : F0 Sex : Female Week : 1 Period : F0 before mating
Dose : EES 5 mg/kg Species : Rat

Animal No.	Ease of removal from cage	Fur condition	Skin	Secretions-Eye, Nose	Exophthalmos	Palpebral closure	Mucosal membranes	Lacrimation
2101	0	0	0	0	0	0	0	0
2102	0	0	0	0	0	0	0	0
2103	0	0	0	0	0	0	0	0
2104	0	0	0	0	0	0	0	0
2105	0	0	0	0	0	0	0	0
2106	0	0	0	0	0	0	0	0
2107	0	0	0	0	0	0	0	0
2108	0	0	0	0	0	0	0	0
2109	0	0	0	0	0	0	0	0
2110	0	0	0	0	0	0	0	0
2111	0	0	0	0	0	0	0	0
2112	0	0	0	0	0	0	0	0
n	12	12	12	12	12	12	12	12

Animal No.	Piloerection	Pupil size	Salivation	Abnormal respiration	Vocalization	Reactivity to handling
2101	0	0	0	0	0	0
2102	0	0	0	0	0	0
2103	0	0	0	0	0	0
2104	0	0	0	0	0	0
2105	0	0	0	0	0	0
2106	0	0	0	0	0	0
2107	0	0	0	0	0	0
2108	0	0	0	0	0	0
2109	0	0	0	0	0	0
2110	0	0	0	0	0	0
2111	0	0	0	0	0	0
2112	0	0	0	0	0	0
n	12	12	12	12	12	12

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

In-the-hand observation
Generation : F0 Sex : Female Week : 1 Period : F0 before mating
Dose : EES 15 mg/kg Species : Rat

Animal No.	Ease of removal from cage	Fur condition	Skin	Secretions-Eye, Nose	Exophthalmos	Palpebral closure	Mucosal membranes	Lacrimation
3101	0	0	0	0	0	0	0	0
3102	0	0	0	0	0	0	0	0
3103	0	0	0	0	0	0	0	0
3104	0	0	0	0	0	0	0	0
3105	0	0	0	0	0	0	0	0
3106	0	0	0	0	0	0	0	0
3107	0	0	0	0	0	0	0	0
3108	0	0	0	0	0	0	0	0
3109	0	0	0	0	0	0	0	0
3110	0	0	0	0	0	0	0	0
3111	0	0	0	0	0	0	0	0
3112	0	0	0	0	0	0	0	0
n	12	12	12	12	12	12	12	12

Animal No.	Piloerection	Pupil size	Salivation	Abnormal respiration	Vocalization	Reactivity to handling
3101	0	0	0	0	0	0
3102	0	0	0	0	0	0
3103	0	0	0	0	0	0
3104	0	0	0	0	0	0
3105	0	0	0	0	0	0
3106	0	0	0	0	0	0
3107	0	0	0	0	0	0
3108	0	0	0	0	0	0
3109	0	0	0	0	0	0
3110	0	0	0	0	0	0
3111	0	0	0	0	0	0
3112	0	0	0	0	0	0
n	12	12	12	12	12	12

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

In-the-hand observation
Generation : F0 Sex : Female Week : 1 Period : F0 before mating
Dose : EES 50 mg/kg Species : Rat

Animal No.	Ease of removal from cage	Fur condition	Skin	Secretions-Eye, Nose	Exophthalmos	Palpebral closure	Mucosal membranes	Lacrimation
4101	0	0	0	0	0	0	0	0
4102	0	0	0	0	0	0	0	0
4103	0	0	0	0	0	0	0	0
4104	0	0	0	0	0	0	0	0
4105	0	0	0	0	0	0	0	0
4106	0	0	0	0	0	0	0	0
4107	0	0	0	0	0	0	0	0
4108	0	0	0	0	0	0	0	0
4109	0	0	0	0	0	0	0	0
4110	0	0	0	0	0	0	0	0
4111	0	0	0	0	0	0	0	0
4112	0	0	0	0	0	0	0	0
n	12	12	12	12	12	12	12	12

Animal No.	Piloerection	Pupil size	Salivation	Abnormal respiration	Vocalization	Reactivity to handling
4101	0	0	0	0	0	0
4102	0	0	0	0	0	0
4103	0	0	0	0	0	0
4104	0	0	0	0	0	0
4105	0	0	0	0	0	0
4106	0	0	0	0	0	0
4107	0	0	0	0	0	0
4108	0	0	0	0	0	0
4109	0	0	0	0	0	0
4110	0	0	0	0	0	0
4111	0	0	0	0	0	0
4112	0	0	0	0	0	0
n	12	12	12	12	12	12

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

In-the-hand observation
Generation : F0 Sex : Female Week : 2 Period : F0 before mating
Dose : EES 0 mg/kg Species : Rat

Animal No.	Ease of removal from cage	Fur condition	Skin	Secretions-Eye, Nose	Exophthalmos	Palpebral closure	Mucosal membranes	Lacrimation
1101	0	0	0	0	0	0	0	0
1102	0	0	0	0	0	0	0	0
1103	0	0	0	0	0	0	0	0
1104	0	0	0	0	0	0	0	0
1105	0	0	0	0	0	0	0	0
1106	0	0	0	0	0	0	0	0
1107	0	0	0	0	0	0	0	0
1108	0	0	0	0	0	0	0	0
1109	0	0	0	0	0	0	0	0
1110	0	0	0	0	0	0	0	0
1111	0	0	0	0	0	0	0	0
1112	0	0	0	0	0	0	0	0
n	12	12	12	12	12	12	12	12

Animal No.	Piloerection	Pupil size	Salivation	Abnormal respiration	Vocalization	Reactivity to handling
1101	0	0	0	0	0	0
1102	0	0	0	0	0	0
1103	0	0	0	0	0	0
1104	0	0	0	0	0	0
1105	0	0	0	0	0	0
1106	0	0	0	0	0	0
1107	0	0	0	0	0	0
1108	0	0	0	0	0	0
1109	0	0	0	0	0	0
1110	0	0	0	0	0	0
1111	0	0	0	0	0	0
1112	0	0	0	0	0	0
n	12	12	12	12	12	12

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

In-the-hand observation
Generation : F0 Sex : Female Week : 2 Period : F0 before mating
Dose : EES 5 mg/kg Species : Rat

Animal No.	Ease of removal from cage	Fur condition	Skin	Secretions-Eye, Nose	Exophthalmos	Palpebral closure	Mucosal membranes	Lacrimation
2101	0	0	0	0	0	0	0	0
2102	0	0	0	0	0	0	0	0
2103	0	0	0	0	0	0	0	0
2104	0	0	0	0	0	0	0	0
2105	0	0	0	0	0	0	0	0
2106	0	0	0	0	0	0	0	0
2107	0	0	0	0	0	0	0	0
2108	0	0	0	0	0	0	0	0
2109	0	0	0	0	0	0	0	0
2110	0	0	0	0	0	0	0	0
2111	0	0	0	0	0	0	0	0
2112	0	0	0	0	0	0	0	0
n	12	12	12	12	12	12	12	12

Animal No.	Piloerection	Pupil size	Salivation	Abnormal respiration	Vocalization	Reactivity to handling
2101	0	0	0	0	0	0
2102	0	0	0	0	0	0
2103	0	0	0	0	0	0
2104	0	0	0	0	0	0
2105	0	0	0	0	0	0
2106	0	0	0	0	0	0
2107	0	0	0	0	0	0
2108	0	0	0	0	0	0
2109	0	0	0	0	0	0
2110	0	0	0	0	0	0
2111	0	0	0	0	0	0
2112	0	0	0	0	0	0
n	12	12	12	12	12	12

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

In-the-hand observation
Generation : F0 Sex : Female Week : 2 Period : F0 before mating
Dose : EES 15 mg/kg Species : Rat

Animal No.	Ease of removal from cage	Fur condition	Skin	Secretions-Eye, Nose	Exophthalmos	Palpebral closure	Mucosal membranes	Lacrimation
3101	0	0	0	0	0	0	0	0
3102	0	0	0	0	0	0	0	0
3103	0	0	0	0	0	0	0	0
3104	0	0	0	0	0	0	0	0
3105	0	0	0	0	0	0	0	0
3106	0	0	0	0	0	0	0	0
3107	0	0	0	0	0	0	0	0
3108	0	0	0	0	0	0	0	0
3109	0	0	0	0	0	0	0	0
3110	0	0	0	0	0	0	0	0
3111	0	0	0	0	0	0	0	0
3112	0	0	0	0	0	0	0	0
n	12	12	12	12	12	12	12	12

Animal No.	Piloerection	Pupil size	Salivation	Abnormal respiration	Vocalization	Reactivity to handling
3101	0	0	0	0	0	0
3102	0	0	0	0	0	0
3103	0	0	0	0	0	0
3104	0	0	0	0	0	0
3105	0	0	0	0	0	0
3106	0	0	0	0	0	0
3107	0	0	0	0	0	0
3108	0	0	0	0	0	0
3109	0	0	0	0	0	0
3110	0	0	0	0	0	0
3111	0	0	0	0	0	0
3112	0	0	0	0	0	0
n	12	12	12	12	12	12

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

In-the-hand observation
Generation : F0 Sex : Female Week : 2 Period : F0 before mating
Dose : EES 50 mg/kg Species : Rat

Animal No.	Ease of removal from cage	Fur condition	Skin	Secretions-Eye, Nose	Exophthalmos	Palpebral closure	Mucosal membranes	Lacrimation
4101	0	0	0	0	0	0	0	0
4102	0	0	0	0	0	0	0	0
4103	0	0	0	0	0	0	0	0
4104	0	0	0	0	0	0	0	0
4105	0	0	0	0	0	0	0	0
4106	0	0	0	0	0	0	0	0
4107	0	0	0	0	0	0	0	0
4108	0	0	0	0	0	0	0	0
4109	0	0	0	0	0	0	0	0
4110	0	0	0	0	0	0	0	0
4111	0	0	0	0	0	0	0	0
4112	0	0	0	0	0	0	0	0
n	12	12	12	12	12	12	12	12

Animal No.	Piloerection	Pupil size	Salivation	Abnormal respiration	Vocalization	Reactivity to handling
4101	0	0	0	0	0	0
4102	0	0	0	0	0	0
4103	0	0	0	0	0	0
4104	0	0	0	0	0	0
4105	0	0	0	0	0	0
4106	0	0	0	0	0	0
4107	0	0	0	0	0	0
4108	0	0	0	0	0	0
4109	0	0	0	0	0	0
4110	0	0	0	0	0	0
4111	0	0	0	0	0	0
4112	0	0	0	0	0	0
n	12	12	12	12	12	12

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

In-the-hand observation
Generation : F0 Sex : Female Day : 1 Period : F0 gestation
Dose : EES 0 mg/kg Species : Rat

Animal No.	Ease of removal from cage	Fur condition	Skin	Secretions-Eye, Nose	Exophthalmos	Palpebral closure	Mucosal membranes	Lacrimation
1101	0	0	0	0	0	0	0	0
1102	0	0	0	0	0	0	0	0
1103	0	0	0	0	0	0	0	0
1104	0	0	0	0	0	0	0	0
1105	0	0	0	0	0	0	0	0
1106	0	0	0	0	0	0	0	0
1107	0	0	0	0	0	0	0	0
1108	0	0	0	0	0	0	0	0
1109	0	0	0	0	0	0	0	0
1110	0	0	0	0	0	0	0	0
1111	0	0	0	0	0	0	0	0
n	11	11	11	11	11	11	11	11

Animal No.	Piloerection	Pupil size	Salivation	Abnormal respiration	Vocalization	Reactivity to handling
1101	0	0	0	0	0	0
1102	0	0	0	0	0	0
1103	0	0	0	0	0	0
1104	0	0	0	0	0	0
1105	0	0	0	0	0	0
1106	0	0	0	0	0	0
1107	0	0	0	0	0	0
1108	0	0	0	0	0	0
1109	0	0	0	0	0	0
1110	0	0	0	0	0	0
1111	0	0	0	0	0	0
n	11	11	11	11	11	11

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

In-the-hand observation
Generation : F0 Sex : Female Day : 1 Period : F0 gestation
Dose : EES 5 mg/kg Species : Rat

Animal No.	Ease of removal from cage	Fur condition	Skin	Secretions-Eye, Nose	Exophthalmos	Palpebral closure	Mucosal membranes	Lacrimation
2101	0	0	0	0	0	0	0	0
2102	0	0	0	0	0	0	0	0
2103	0	0	0	0	0	0	0	0
2104	0	0	0	0	0	0	0	0
2105	0	0	0	0	0	0	0	0
2106	0	0	0	0	0	0	0	0
2107	0	0	0	0	0	0	0	0
2108	0	0	0	0	0	0	0	0
2109	0	0	0	0	0	0	0	0
2110	0	0	0	0	0	0	0	0
2111	0	0	0	0	0	0	0	0
2112	0	0	0	0	0	0	0	0
n	12	12	12	12	12	12	12	12

Animal No.	Piloerection	Pupil size	Salivation	Abnormal respiration	Vocalization	Reactivity to handling
2101	0	0	0	0	0	0
2102	0	0	0	0	0	0
2103	0	0	0	0	0	0
2104	0	0	0	0	0	0
2105	0	0	0	0	0	0
2106	0	0	0	0	0	0
2107	0	0	0	0	0	0
2108	0	0	0	0	0	0
2109	0	0	0	0	0	0
2110	0	0	0	0	0	0
2111	0	0	0	0	0	0
2112	0	0	0	0	0	0
n	12	12	12	12	12	12

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

In-the-hand observation
Generation : F0 Sex : Female Day : 1 Period : F0 gestation
Dose : EES 15 mg/kg Species : Rat

Animal No.	Ease of removal from cage	Fur condition	Skin	Secretions-Eye, Nose	Exophthalmos	Palpebral closure	Mucosal membranes	Lacrimation
3101	0	0	0	0	0	0	0	0
3103	0	0	0	0	0	0	0	0
3104	0	0	0	0	0	0	0	0
3105	0	0	0	0	0	0	0	0
3106	0	0	0	0	0	0	0	0
3107	0	0	0	0	0	0	0	0
3108	0	0	0	0	0	0	0	0
3109	0	0	0	0	0	0	0	0
3110	0	0	0	0	0	0	0	0
3111	0	0	0	0	0	0	0	0
3112	0	0	0	0	0	0	0	0
n	11	11	11	11	11	11	11	11

Animal No.	Piloerection	Pupil size	Salivation	Abnormal respiration	Vocalization	Reactivity to handling
3101	0	0	0	0	0	0
3103	0	0	0	0	0	0
3104	0	0	0	0	0	0
3105	0	0	0	0	0	0
3106	0	0	0	0	0	0
3107	0	0	0	0	0	0
3108	0	0	0	0	0	0
3109	0	0	0	0	0	0
3110	0	0	0	0	0	0
3111	0	0	0	0	0	0
3112	0	0	0	0	0	0
n	11	11	11	11	11	11

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

In-the-hand observation
Generation : F0 Sex : Female Day : 1 Period : F0 gestation
Dose : EES 50 mg/kg Species : Rat

Animal No.	Ease of removal from cage	Fur condition	Skin	Secretions-Eye, Nose	Exophthalmos	Palpebral closure	Mucosal membranes	Lacrimation
4101	0	0	0	0	0	0	0	0
4103	0	0	0	0	0	0	0	0
4104	0	0	0	0	0	0	0	0
4105	0	0	0	0	0	0	0	0
4106	0	0	0	0	0	0	0	0
4107	0	0	0	0	0	0	0	0
4108	0	0	0	0	0	0	0	0
4109	0	0	0	0	0	0	0	0
4110	0	0	0	0	0	0	0	0
4111	0	0	0	0	0	0	0	0
4112	0	0	0	0	0	0	0	0
n	11	11	11	11	11	11	11	11

Animal No.	Piloerection	Pupil size	Salivation	Abnormal respiration	Vocalization	Reactivity to handling
4101	0	0	0	0	0	0
4103	0	0	0	0	0	0
4104	0	0	0	0	0	0
4105	0	0	0	0	0	0
4106	0	0	0	0	0	0
4107	0	0	0	0	0	0
4108	0	0	0	0	0	0
4109	0	0	0	0	0	0
4110	0	0	0	0	0	0
4111	0	0	0	0	0	0
4112	0	0	0	0	0	0
n	11	11	11	11	11	11

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

In-the-hand observation
Generation : F0 Sex : Female Day : 7 Period : F0 gestation
Dose : EES 0 mg/kg Species : Rat

Animal No.	Ease of removal from cage	Fur condition	Skin	Secretions-Eye, Nose	Exophthalmos	Palpebral closure	Mucosal membranes	Lacrimation
1101	0	0	0	0	0	0	0	0
1102	0	0	0	0	0	0	0	0
1103	0	0	0	0	0	0	0	0
1104	0	0	0	0	0	0	0	0
1105	0	0	0	0	0	0	0	0
1106	0	0	0	0	0	0	0	0
1107	0	0	0	0	0	0	0	0
1108	0	0	0	0	0	0	0	0
1109	0	0	0	0	0	0	0	0
1110	0	0	0	0	0	0	0	0
1111	0	0	0	0	0	0	0	0
n	11	11	11	11	11	11	11	11

Animal No.	Piloerection	Pupil size	Salivation	Abnormal respiration	Vocalization	Reactivity to handling
1101	0	0	0	0	0	0
1102	0	0	0	0	0	0
1103	0	0	0	0	0	0
1104	0	0	0	0	0	0
1105	0	0	0	0	0	0
1106	0	0	0	0	0	0
1107	0	0	0	0	0	0
1108	0	0	0	0	0	0
1109	0	0	0	0	0	0
1110	0	0	0	0	0	0
1111	0	0	0	0	0	0
n	11	11	11	11	11	11

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

In-the-hand observation
Generation : F0 Sex : Female Day : 7 Period : F0 gestation
Dose : EES 5 mg/kg Species : Rat

Animal No.	Ease of removal from cage	Fur condition	Skin	Secretions-Eye, Nose	Exophthalmos	Palpebral closure	Mucosal membranes	Lacrimation
2101	0	0	0	0	0	0	0	0
2102	0	0	0	0	0	0	0	0
2103	0	0	0	0	0	0	0	0
2104	0	0	0	0	0	0	0	0
2105	0	0	0	0	0	0	0	0
2106	0	0	0	0	0	0	0	0
2107	0	0	0	0	0	0	0	0
2108	0	0	0	0	0	0	0	0
2109	0	0	0	0	0	0	0	0
2110	0	0	0	0	0	0	0	0
2111	0	0	0	0	0	0	0	0
2112	0	0	0	0	0	0	0	0
n	12	12	12	12	12	12	12	12

Animal No.	Piloerection	Pupil size	Salivation	Abnormal respiration	Vocalization	Reactivity to handling
2101	0	0	0	0	0	0
2102	0	0	0	0	0	0
2103	0	0	0	0	0	0
2104	0	0	0	0	0	0
2105	0	0	0	0	0	0
2106	0	0	0	0	0	0
2107	0	0	0	0	0	0
2108	0	0	0	0	0	0
2109	0	0	0	0	0	0
2110	0	0	0	0	0	0
2111	0	0	0	0	0	0
2112	0	0	0	0	0	0
n	12	12	12	12	12	12

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

In-the-hand observation
Generation : F0 Sex : Female Day : 7 Period : F0 gestation
Dose : EES 15 mg/kg Species : Rat

Animal No.	Ease of removal from cage	Fur condition	Skin	Secretions-Eye, Nose	Exophthalmos	Palpebral closure	Mucosal membranes	Lacrimation
3101	0	0	0	0	0	0	0	0
3103	0	0	0	0	0	0	0	0
3104	0	0	0	0	0	0	0	0
3105	0	0	0	0	0	0	0	0
3106	0	0	0	0	0	0	0	0
3107	0	0	0	0	0	0	0	0
3108	0	0	0	0	0	0	0	0
3109	0	0	0	0	0	0	0	0
3110	0	0	0	0	0	0	0	0
3111	0	0	0	0	0	0	0	0
3112	0	0	0	0	0	0	0	0
n	11	11	11	11	11	11	11	11

Animal No.	Piloerection	Pupil size	Salivation	Abnormal respiration	Vocalization	Reactivity to handling
3101	0	0	0	0	0	0
3103	0	0	0	0	0	0
3104	0	0	0	0	0	0
3105	0	0	0	0	0	0
3106	0	0	0	0	0	0
3107	0	0	0	0	0	0
3108	0	0	0	0	0	0
3109	0	0	0	0	0	0
3110	0	0	0	0	0	0
3111	0	0	0	0	0	0
3112	0	0	0	0	0	0
n	11	11	11	11	11	11

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

In-the-hand observation
Generation : F0 Sex : Female Day : 7 Period : F0 gestation
Dose : EES 50 mg/kg Species : Rat

Animal No.	Ease of removal from cage	Fur condition	Skin	Secretions-Eye, Nose	Exophthalmos	Palpebral closure	Mucosal membranes	Lacrimation
4101	0	0	0	0	0	0	0	0
4103	0	0	0	0	0	0	0	0
4104	0	0	0	0	0	0	0	0
4105	0	0	0	0	0	0	0	0
4106	0	0	0	0	0	0	0	0
4107	0	0	0	0	0	0	0	0
4108	0	0	0	0	0	0	0	0
4109	0	0	0	0	0	0	0	0
4110	0	0	0	0	0	0	0	0
4111	0	0	0	0	0	0	0	0
4112	0	0	0	0	0	0	0	0
n	11	11	11	11	11	11	11	11

Animal No.	Piloerection	Pupil size	Salivation	Abnormal respiration	Vocalization	Reactivity to handling
4101	0	0	0	0	0	0
4103	0	0	0	0	0	0
4104	0	0	0	0	0	0
4105	0	0	0	0	0	0
4106	0	0	0	0	0	0
4107	0	0	0	0	0	0
4108	0	0	0	0	0	0
4109	0	0	0	0	0	0
4110	0	0	0	0	0	0
4111	0	0	0	0	0	0
4112	0	0	0	0	0	0
n	11	11	11	11	11	11

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

In-the-hand observation
Generation : F0 Sex : Female Day : 14 Period : F0 gestation
Dose : EES 0 mg/kg Species : Rat

Animal No.	Ease of removal from cage	Fur condition	Skin	Secretions-Eye, Nose	Exophthalmos	Palpebral closure	Mucosal membranes	Lacrimation
1101	0	0	0	0	0	0	0	0
1102	0	0	0	0	0	0	0	0
1103	0	0	0	0	0	0	0	0
1104	0	0	0	0	0	0	0	0
1105	0	0	0	0	0	0	0	0
1106	0	0	0	0	0	0	0	0
1107	0	0	0	0	0	0	0	0
1108	0	0	0	0	0	0	0	0
1109	0	0	0	0	0	0	0	0
1110	0	0	0	0	0	0	0	0
1111	0	0	0	0	0	0	0	0
n	11	11	11	11	11	11	11	11

Animal No.	Piloerection	Pupil size	Salivation	Abnormal respiration	Vocalization	Reactivity to handling
1101	0	0	0	0	0	0
1102	0	0	0	0	0	0
1103	0	0	0	0	0	0
1104	0	0	0	0	0	0
1105	0	0	0	0	0	0
1106	0	0	0	0	0	0
1107	0	0	0	0	0	0
1108	0	0	0	0	0	0
1109	0	0	0	0	0	0
1110	0	0	0	0	0	0
1111	0	0	0	0	0	0
n	11	11	11	11	11	11

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

In-the-hand observation
Generation : F0 Sex : Female Day : 14 Period : F0 gestation
Dose : EES 5 mg/kg Species : Rat

Animal No.	Ease of removal from cage	Fur condition	Skin	Secretions-Eye, Nose	Exophthalmos	Palpebral closure	Mucosal membranes	Lacrimation
2101	0	0	0	0	0	0	0	0
2102	0	0	0	0	0	0	0	0
2103	0	0	0	0	0	0	0	0
2104	0	0	0	0	0	0	0	0
2105	0	0	0	0	0	0	0	0
2106	0	0	0	0	0	0	0	0
2107	0	0	0	0	0	0	0	0
2108	0	0	0	0	0	0	0	0
2109	0	0	0	0	0	0	0	0
2110	0	0	0	0	0	0	0	0
2111	0	0	0	0	0	0	0	0
2112	0	0	0	0	0	0	0	0
n	12	12	12	12	12	12	12	12

Animal No.	Piloerection	Pupil size	Salivation	Abnormal respiration	Vocalization	Reactivity to handling
2101	0	0	0	0	0	0
2102	0	0	0	0	0	0
2103	0	0	0	0	0	0
2104	0	0	0	0	0	0
2105	0	0	0	0	0	0
2106	0	0	0	0	0	0
2107	0	0	0	0	0	0
2108	0	0	0	0	0	0
2109	0	0	0	0	0	0
2110	0	0	0	0	0	0
2111	0	0	0	0	0	0
2112	0	0	0	0	0	0
n	12	12	12	12	12	12

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

In-the-hand observation
Generation : F0 Sex : Female Day : 14 Period : F0 gestation
Dose : EES 15 mg/kg Species : Rat

Animal No.	Ease of removal from cage	Fur condition	Skin	Secretions-Eye, Nose	Exophthalmos	Palpebral closure	Mucosal membranes	Lacrimation
3101	0	0	0	0	0	0	0	0
3103	0	0	0	0	0	0	0	0
3104	0	0	0	0	0	0	0	0
3105	0	0	0	0	0	0	0	0
3106	0	0	0	0	0	0	0	0
3107	0	0	0	0	0	0	0	0
3108	0	0	0	0	0	0	0	0
3109	0	0	0	0	0	0	0	0
3110	0	0	0	0	0	0	0	0
3111	0	0	0	0	0	0	0	0
3112	0	0	0	0	0	0	0	0
n	11	11	11	11	11	11	11	11

Animal No.	Piloerection	Pupil size	Salivation	Abnormal respiration	Vocalization	Reactivity to handling
3101	0	0	0	0	0	0
3103	0	0	0	0	0	0
3104	0	0	0	0	0	0
3105	0	0	0	0	0	0
3106	0	0	0	0	0	0
3107	0	0	0	0	0	0
3108	0	0	0	0	0	0
3109	0	0	0	0	0	0
3110	0	0	0	0	0	0
3111	0	0	0	0	0	0
3112	0	0	0	0	0	0
n	11	11	11	11	11	11

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

In-the-hand observation
Generation : F0 Sex : Female Day : 14 Period : F0 gestation
Dose : EES 50 mg/kg Species : Rat

Animal No.	Ease of removal from cage	Fur condition	Skin	Secretions-Eye, Nose	Exophthalmos	Palpebral closure	Mucosal membranes	Lacrimation
4101	0	0	0	0	0	0	0	0
4103	0	0	0	0	0	0	0	0
4104	0	0	0	0	0	0	0	0
4105	0	0	0	0	0	0	0	0
4106	0	0	0	0	0	0	0	0
4107	0	0	0	0	0	0	0	0
4108	0	0	0	0	0	0	0	0
4109	0	0	0	0	0	0	0	0
4110	0	0	0	0	0	0	0	0
4111	0	0	0	0	0	0	0	0
4112	0	0	0	0	0	0	0	0
n	11	11	11	11	11	11	11	11

Animal No.	Piloerection	Pupil size	Salivation	Abnormal respiration	Vocalization	Reactivity to handling
4101	0	0	0	0	0	0
4103	0	0	0	0	0	0
4104	0	0	0	0	0	0
4105	0	0	0	0	0	0
4106	0	0	0	0	0	0
4107	0	0	0	0	0	0
4108	0	0	0	0	0	0
4109	0	0	0	0	0	0
4110	0	0	0	0	0	0
4111	0	0	0	0	0	0
4112	0	0	0	0	0	0
n	11	11	11	11	11	11

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

In-the-hand observation
Generation : F0 Sex : Female Day : 20 Period : F0 gestation
Dose : EES 0 mg/kg Species : Rat

Animal No.	Ease of removal from cage	Fur condition	Skin	Secretions-Eye, Nose	Exophthalmos	Palpebral closure	Mucosal membranes	Lacrimation
1101	0	0	0	0	0	0	0	0
1102	0	0	0	0	0	0	0	0
1103	0	0	0	0	0	0	0	0
1104	0	0	0	0	0	0	0	0
1105	0	0	0	0	0	0	0	0
1106	0	0	0	0	0	0	0	0
1107	0	0	0	0	0	0	0	0
1108	0	0	0	0	0	0	0	0
1109	0	0	0	0	0	0	0	0
1110	0	0	0	0	0	0	0	0
1111	0	0	0	0	0	0	0	0
n	11	11	11	11	11	11	11	11

Animal No.	Piloerection	Pupil size	Salivation	Abnormal respiration	Vocalization	Reactivity to handling
1101	0	0	0	0	0	0
1102	0	0	0	0	0	0
1103	0	0	0	0	0	0
1104	0	0	0	0	0	0
1105	0	0	0	0	0	0
1106	0	0	0	0	0	0
1107	0	0	0	0	0	0
1108	0	0	0	0	0	0
1109	0	0	0	0	0	0
1110	0	0	0	0	0	0
1111	0	0	0	0	0	0
n	11	11	11	11	11	11

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

In-the-hand observation
Generation : F0 Sex : Female Day : 20 Period : F0 gestation
Dose : EES 5 mg/kg Species : Rat

Animal No.	Ease of removal from cage	Fur condition	Skin	Secretions-Eye, Nose	Exophthalmos	Palpebral closure	Mucosal membranes	Lacrimation
2101	0	0	0	0	0	0	0	0
2102	0	0	0	0	0	0	0	0
2103	0	0	0	0	0	0	0	0
2104	0	0	0	0	0	0	0	0
2105	0	0	0	0	0	0	0	0
2106	0	0	0	0	0	0	0	0
2107	0	0	0	0	0	0	0	0
2108	0	0	0	0	0	0	0	0
2109	0	0	0	0	0	0	0	0
2110	0	0	0	0	0	0	0	0
2111	0	0	0	0	0	0	0	0
2112	0	0	0	0	0	0	0	0
n	12	12	12	12	12	12	12	12

Animal No.	Piloerection	Pupil size	Salivation	Abnormal respiration	Vocalization	Reactivity to handling
2101	0	0	0	0	0	0
2102	0	0	0	0	0	0
2103	0	0	0	0	0	0
2104	0	0	0	0	0	0
2105	0	0	0	0	0	0
2106	0	0	0	0	0	0
2107	0	0	0	0	0	0
2108	0	0	0	0	0	0
2109	0	0	0	0	0	0
2110	0	0	0	0	0	0
2111	0	0	0	0	0	0
2112	0	0	0	0	0	0
n	12	12	12	12	12	12

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

In-the-hand observation
Generation : F0 Sex : Female Day : 20 Period : F0 gestation
Dose : EES 15 mg/kg Species : Rat

Animal No.	Ease of removal from cage	Fur condition	Skin	Secretions-Eye, Nose	Exophthalmos	Palpebral closure	Mucosal membranes	Lacrimation
3101	0	0	0	0	0	0	0	0
3103	0	0	0	0	0	0	0	0
3104	0	0	0	0	0	0	0	0
3105	0	0	0	0	0	0	0	0
3106	0	0	0	0	0	0	0	0
3107	0	0	0	0	0	0	0	0
3108	0	0	0	0	0	0	0	0
3109	0	0	0	0	0	0	0	0
3110	0	0	0	0	0	0	0	0
3111	0	0	0	0	0	0	0	0
3112	0	0	0	0	0	0	0	0
n	11	11	11	11	11	11	11	11

Animal No.	Piloerection	Pupil size	Salivation	Abnormal respiration	Vocalization	Reactivity to handling
3101	0	0	0	0	0	0
3103	0	0	0	0	0	0
3104	0	0	0	0	0	0
3105	0	0	0	0	0	0
3106	0	0	0	0	0	0
3107	0	0	0	0	0	0
3108	0	0	0	0	0	0
3109	0	0	0	0	0	0
3110	0	0	0	0	0	0
3111	0	0	0	0	0	0
3112	0	0	0	0	0	0
n	11	11	11	11	11	11

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

In-the-hand observation
Generation : F0 Sex : Female Day : 20 Period : F0 gestation
Dose : EES 50 mg/kg Species : Rat

Animal No.	Ease of removal from cage	Fur condition	Skin	Secretions-Eye, Nose	Exophthalmos	Palpebral closure	Mucosal membranes	Lacrimation
4101	0	0	0	0	0	0	0	0
4103	0	0	0	0	0	0	0	0
4104	0	0	0	0	0	0	0	0
4105	0	0	0	0	0	0	0	0
4106	0	0	0	0	0	0	0	0
4107	0	0	0	0	0	0	0	0
4108	0	0	0	0	0	0	0	0
4109	0	0	0	0	0	0	0	0
4110	0	0	0	0	0	0	0	0
4111	0	0	0	0	0	0	0	0
4112	0	0	0	0	0	0	0	0
n	11	11	11	11	11	11	11	11

Animal No.	Piloerection	Pupil size	Salivation	Abnormal respiration	Vocalization	Reactivity to handling
4101	0	0	0	0	0	0
4103	0	0	0	0	0	0
4104	0	0	0	0	0	0
4105	0	0	0	0	0	0
4106	0	0	0	0	0	0
4107	0	0	0	0	0	0
4108	0	0	0	0	0	0
4109	0	0	0	0	0	0
4110	0	0	0	0	0	0
4111	0	0	0	0	0	0
4112	0	0	0	0	0	0
n	11	11	11	11	11	11

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

In-the-hand observation
Generation : F0 Sex : Female Day : 6 Period : F0 lactation
Dose : EES 0 mg/kg Species : Rat

Animal No.	Ease of removal from cage	Fur condition	Skin	Secretions-Eye, Nose	Exophthalmos	Palpebral closure	Mucosal membranes	Lacrimation
1101	0	0	0	0	0	0	0	0
1102	0	0	0	0	0	0	0	0
1103	0	0	0	0	0	0	0	0
1104	0	0	0	0	0	0	0	0
1105	0	0	0	0	0	0	0	0
1106	0	0	0	0	0	0	0	0
1107	0	0	0	0	0	0	0	0
1108	0	0	0	0	0	0	0	0
1109	0	0	0	0	0	0	0	0
1110	0	0	0	0	0	0	0	0
1111	0	0	0	0	0	0	0	0
n	11	11	11	11	11	11	11	11

Animal No.	Piloerection	Pupil size	Salivation	Abnormal respiration	Vocalization	Reactivity to handling
1101	0	0	0	0	0	0
1102	0	0	0	0	0	0
1103	0	0	0	0	0	0
1104	0	0	0	0	0	0
1105	0	0	0	0	0	0
1106	0	0	0	0	0	0
1107	0	0	0	0	0	0
1108	0	0	0	0	0	0
1109	0	0	0	0	0	0
1110	0	0	0	0	0	0
1111	0	0	0	0	0	0
n	11	11	11	11	11	11

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

In-the-hand observation
Generation : F0 Sex : Female Day : 6 Period : F0 lactation
Dose : EES 5 mg/kg Species : Rat

Animal No.	Ease of removal from cage	Fur condition	Skin	Secretions-Eye, Nose	Exophthalmos	Palpebral closure	Mucosal membranes	Lacrimation
2101	0	0	0	0	0	0	0	0
2102	0	0	0	0	0	0	0	0
2103	0	0	0	0	0	0	0	0
2104	0	0	0	0	0	0	0	0
2105	0	0	0	0	0	0	0	0
2106	0	0	0	0	0	0	0	0
2107	0	0	0	0	0	0	0	0
2108	0	0	0	0	0	0	0	0
2109	0	0	0	0	0	0	0	0
2110	0	0	0	0	0	0	0	0
2111	0	0	0	0	0	0	0	0
2112	0	0	0	0	0	0	0	0
n	12	12	12	12	12	12	12	12

Animal No.	Piloerection	Pupil size	Salivation	Abnormal respiration	Vocalization	Reactivity to handling
2101	0	0	0	0	0	0
2102	0	0	0	0	0	0
2103	0	0	0	0	0	0
2104	0	0	0	0	0	0
2105	0	0	0	0	0	0
2106	0	0	0	0	0	0
2107	0	0	0	0	0	0
2108	0	0	0	0	0	0
2109	0	0	0	0	0	0
2110	0	0	0	0	0	0
2111	0	0	0	0	0	0
2112	0	0	0	0	0	0
n	12	12	12	12	12	12

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

In-the-hand observation
Generation : F0 Sex : Female Day : 6 Period : F0 lactation
Dose : EES 15 mg/kg Species : Rat

Animal No.	Ease of removal from cage	Fur condition	Skin	Secretions-Eye, Nose	Exophthalmos	Palpebral closure	Mucosal membranes	Lacrimation
3101	0	0	0	0	0	0	0	0
3103	0	0	0	0	0	0	0	0
3104	0	0	0	0	0	0	0	0
3106	0	0	0	0	0	0	0	0
3107	0	0	0	0	0	0	0	0
3108	0	0	0	0	0	0	0	0
3109	0	0	0	0	0	0	0	0
3110	0	0	0	0	0	0	0	0
3111	0	0	0	0	0	0	0	0
3112	0	0	0	0	0	0	0	0
n	10	10	10	10	10	10	10	10

Animal No.	Piloerection	Pupil size	Salivation	Abnormal respiration	Vocalization	Reactivity to handling
3101	0	0	0	0	0	0
3103	0	0	0	0	0	0
3104	0	0	0	0	0	0
3106	0	0	0	0	0	0
3107	0	0	0	0	0	0
3108	0	0	0	0	0	0
3109	0	0	0	0	0	0
3110	0	0	0	0	0	0
3111	0	0	0	0	0	0
3112	0	0	0	0	0	0
n	10	10	10	10	10	10

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

In-the-hand observation
Generation : F0 Sex : Female Day : 6 Period : F0 lactation
Dose : EES 50 mg/kg Species : Rat

Animal No.	Ease of removal from cage	Fur condition	Skin	Secretions-Eye, Nose	Exophthalmos	Palpebral closure	Mucosal membranes	Lacrimation
4101	0	0	0	0	0	0	0	0
4103	0	0	0	0	0	0	0	0
4104	0	0	0	0	0	0	0	0
4105	0	0	0	0	0	0	0	0
4106	0	0	0	0	0	0	0	0
4107	0	0	0	0	0	0	0	0
4108	0	0	0	0	0	0	0	0
4109	0	0	0	0	0	0	0	0
4110	0	0	0	0	0	0	0	0
4111	0	0	0	0	0	0	0	0
4112	0	0	0	0	0	0	0	0
n	11	11	11	11	11	11	11	11

Animal No.	Piloerection	Pupil size	Salivation	Abnormal respiration	Vocalization	Reactivity to handling
4101	0	0	0	0	0	0
4103	0	0	0	0	0	0
4104	0	0	0	0	0	0
4105	0	0	0	0	0	0
4106	0	0	0	0	0	0
4107	0	0	0	0	0	0
4108	0	0	0	0	0	0
4109	0	0	0	0	0	0
4110	0	0	0	0	0	0
4111	0	0	0	0	0	0
4112	0	0	0	0	0	0
n	11	11	11	11	11	11

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

In-the-hand observation
Generation : F0 Sex : Female Day : 13 Period : F0 lactation
Dose : EES 0 mg/kg Species : Rat

Animal No.	Ease of removal from cage	Fur condition	Skin	Secretions-Eye, Nose	Exophthalmos	Palpebral closure	Mucosal membranes	Lacrimation
1101	0	0	0	0	0	0	0	0
1102	0	0	0	0	0	0	0	0
1103	0	0	0	0	0	0	0	0
1104	0	0	0	0	0	0	0	0
1105	0	0	0	0	0	0	0	0
1106	0	0	0	0	0	0	0	0
1107	0	0	0	0	0	0	0	0
1108	0	0	0	0	0	0	0	0
1109	0	0	0	0	0	0	0	0
1110	0	0	0	0	0	0	0	0
1111	0	0	0	0	0	0	0	0
n	11	11	11	11	11	11	11	11

Animal No.	Piloerection	Pupil size	Salivation	Abnormal respiration	Vocalization	Reactivity to handling
1101	0	0	0	0	0	0
1102	0	0	0	0	0	0
1103	0	0	0	0	0	0
1104	0	0	0	0	0	0
1105	0	0	0	0	0	0
1106	0	0	0	0	0	0
1107	0	0	0	0	0	0
1108	0	0	0	0	0	0
1109	0	0	0	0	0	0
1110	0	0	0	0	0	0
1111	0	0	0	0	0	0
n	11	11	11	11	11	11

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

In-the-hand observation
Generation : F0 Sex : Female Day : 13 Period : F0 lactation
Dose : EES 5 mg/kg Species : Rat

Animal No.	Ease of removal from cage	Fur condition	Skin	Secretions-Eye, Nose	Exophthalmos	Palpebral closure	Mucosal membranes	Lacrimation
2101	0	0	0	0	0	0	0	0
2102	0	0	0	0	0	0	0	0
2103	0	0	0	0	0	0	0	0
2104	0	0	0	0	0	0	0	0
2105	0	0	0	0	0	0	0	0
2106	0	0	0	0	0	0	0	0
2107	0	0	0	0	0	0	0	0
2108	0	0	0	0	0	0	0	0
2109	0	0	0	0	0	0	0	0
2110	0	0	0	0	0	0	0	0
2111	0	0	0	0	0	0	0	0
2112	0	0	0	0	0	0	0	0
n	12	12	12	12	12	12	12	12

Animal No.	Piloerection	Pupil size	Salivation	Abnormal respiration	Vocalization	Reactivity to handling
2101	0	0	0	0	0	0
2102	0	0	0	0	0	0
2103	0	0	0	0	0	0
2104	0	0	0	0	0	0
2105	0	0	0	0	0	0
2106	0	0	0	0	0	0
2107	0	0	0	0	0	0
2108	0	0	0	0	0	0
2109	0	0	0	0	0	0
2110	0	0	0	0	0	0
2111	0	0	0	0	0	0
2112	0	0	0	0	0	0
n	12	12	12	12	12	12

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
EES: Ethyl ethyldimethyltetradecylammonium sulphate

In-the-hand observation
Generation : F0 Sex : Female Day : 13 Period : F0 lactation
Dose : EES 15 mg/kg Species : Rat

Animal No.	Ease of removal from cage	Fur condition	Skin	Secretions-Eye, Nose	Exophthalmos	Palpebral closure	Mucosal membranes	Lacrimation
3101	0	0	0	0	0	0	0	0
3103	0	0	0	0	0	0	0	0
3104	0	0	0	0	0	0	0	0
3106	0	0	0	0	0	0	0	0
3107	0	0	0	0	0	0	0	0
3108	0	0	0	0	0	0	0	0
3109	0	0	0	0	0	0	0	0
3110	0	0	0	0	0	0	0	0
3111	0	0	0	0	0	0	0	0
3112	0	0	0	0	0	0	0	0
n	10	10	10	10	10	10	10	10

Animal No.	Piloerection	Pupil size	Salivation	Abnormal respiration	Vocalization	Reactivity to handling
3101	0	0	0	0	0	0
3103	0	0	0	0	0	0
3104	0	0	0	0	0	0
3106	0	0	0	0	0	0
3107	0	0	0	0	0	0
3108	0	0	0	0	0	0
3109	0	0	0	0	0	0
3110	0	0	0	0	0	0
3111	0	0	0	0	0	0
3112	0	0	0	0	0	0
n	10	10	10	10	10	10

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
EES: Ethyl ethyldimethyltetradecylammonium sulphate

In-the-hand observation
Generation : F0 Sex : Female Day : 13 Period : F0 lactation
Dose : EES 50 mg/kg Species : Rat

Animal No.	Ease of removal from cage	Fur condition	Skin	Secretions-Eye, Nose	Exophthalmos	Palpebral closure	Mucosal membranes	Lacrimation
4101	0	0	0	0	0	0	0	0
4103	0	0	0	0	0	0	0	0
4104	0	0	0	0	0	0	0	0
4105	0	0	0	0	0	0	0	0
4106	0	0	0	0	0	0	0	0
4107	0	0	0	0	0	0	0	0
4108	0	0	0	0	0	0	0	0
4109	0	0	0	0	0	0	0	0
4110	0	0	0	0	0	0	0	0
4111	0	0	0	0	0	0	0	0
4112	0	0	0	0	0	0	0	0
n	11	11	11	11	11	11	11	11

Animal No.	Piloerection	Pupil size	Salivation	Abnormal respiration	Vocalization	Reactivity to handling
4101	0	0	0	0	0	0
4103	0	0	0	0	0	0
4104	0	0	0	0	0	0
4105	0	0	0	0	0	0
4106	0	0	0	0	0	0
4107	0	0	0	0	0	0
4108	0	0	0	0	0	0
4109	0	0	0	0	0	0
4110	0	0	0	0	0	0
4111	0	0	0	0	0	0
4112	0	0	0	0	0	0
n	11	11	11	11	11	11

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Study No. : R-1244

In-the-hand observation

Period : Administration (non-mating group)

Generation : F0 Sex : Female Week : 1 Dose : EES 0 mg/kg Species : Rat

Animal No.	Ease of removal from cage	Fur condition	Skin	Secretions-Eye, Nose	Exophthalmos	Palpebral closure	Mucosal membranes	Lacrimation
5101	0	0	0	0	0	0	0	0
5102	0	0	0	0	0	0	0	0
5103	0	0	0	0	0	0	0	0
5104	0	0	0	0	0	0	0	0
5105	0	0	0	0	0	0	0	0
5106	0	0	0	0	0	0	0	0
5107	0	0	0	0	0	0	0	0
5108	0	0	0	0	0	0	0	0
5109	0	0	0	0	0	0	0	0
5110	0	0	0	0	0	0	0	0
n	10	10	10	10	10	10	10	10

Animal No.	Piloerection	Pupil size	Salivation	Abnormal respiration	Vocalization	Reactivity to handling
5101	0	0	0	0	0	0
5102	0	0	0	0	0	0
5103	0	0	0	0	0	0
5104	0	0	0	0	0	0
5105	0	0	0	0	0	0
5106	0	0	0	0	0	0
5107	0	0	0	0	0	0
5108	0	0	0	0	0	0
5109	0	0	0	0	0	0
5110	0	0	0	0	0	0
n	10	10	10	10	10	10

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

In-the-hand observation
Generation : F0 Sex : Female Week : 1 Period : Administration (non-mating group)
Dose : EES 50 mg/kg Species : Rat

Animal No.	Ease of removal from cage	Fur condition	Skin	Secretions-Eye, Nose	Exophthalmos	Palpebral closure	Mucosal membranes	Lacrimation
6101	0	0	0	0	0	0	0	0
6102	0	0	0	0	0	0	0	0
6103	0	0	0	0	0	0	0	0
6104	0	0	0	0	0	0	0	0
6105	0	0	0	0	0	0	0	0
6106	0	0	0	0	0	0	0	0
6107	0	0	0	0	0	0	0	0
6108	0	0	0	0	0	0	0	0
6109	0	0	0	0	0	0	0	0
6110	0	0	0	0	0	0	0	0
n	10	10	10	10	10	10	10	10

Animal No.	Piloerection	Pupil size	Salivation	Abnormal respiration	Vocalization	Reactivity to handling
6101	0	0	0	0	0	0
6102	0	0	0	0	0	0
6103	0	0	0	0	0	0
6104	0	0	0	0	0	0
6105	0	0	0	0	0	0
6106	0	0	0	0	0	0
6107	0	0	0	0	0	0
6108	0	0	0	0	0	0
6109	0	0	0	0	0	0
6110	0	0	0	0	0	0
n	10	10	10	10	10	10

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

In-the-hand observation
Generation : F0 Sex : Female Week : 2 Period : Administration (non-mating group)
Dose : EES 0 mg/kg Species : Rat

Animal No.	Ease of removal from cage	Fur condition	Skin	Secretions-Eye, Nose	Exophthalmos	Palpebral closure	Mucosal membranes	Lacrimation
5101	0	0	0	0	0	0	0	0
5102	0	0	0	0	0	0	0	0
5103	0	0	0	0	0	0	0	0
5104	0	0	0	0	0	0	0	0
5105	0	0	0	0	0	0	0	0
5106	0	0	0	0	0	0	0	0
5107	0	0	0	0	0	0	0	0
5108	0	0	0	0	0	0	0	0
5109	0	0	0	0	0	0	0	0
5110	0	0	0	0	0	0	0	0
n	10	10	10	10	10	10	10	10

Animal No.	Piloerection	Pupil size	Salivation	Abnormal respiration	Vocalization	Reactivity to handling
5101	0	0	0	0	0	0
5102	0	0	0	0	0	0
5103	0	0	0	0	0	0
5104	0	0	0	0	0	0
5105	0	0	0	0	0	0
5106	0	0	0	0	0	0
5107	0	0	0	0	0	0
5108	0	0	0	0	0	0
5109	0	0	0	0	0	0
5110	0	0	0	0	0	0
n	10	10	10	10	10	10

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

In-the-hand observation
Generation : F0 Sex : Female Week : 2 Period : Administration (non-mating group)
Dose : EES 50 mg/kg Species : Rat

Animal No.	Ease of removal from cage	Fur condition	Skin	Secretions-Eye, Nose	Exophthalmos	Palpebral closure	Mucosal membranes	Lacrimation
6101	0	0	0	0	0	0	0	0
6102	0	0	0	0	0	0	0	0
6103	0	0	0	0	0	0	0	0
6104	0	0	0	0	0	0	0	0
6105	0	0	0	0	0	0	0	0
6106	0	0	0	0	0	0	0	0
6107	0	0	0	0	0	0	0	0
6108	0	0	0	0	0	0	0	0
6109	0	0	0	0	0	0	0	0
6110	0	0	0	0	0	0	0	0
n	10	10	10	10	10	10	10	10

Animal No.	Piloerection	Pupil size	Salivation	Abnormal respiration	Vocalization	Reactivity to handling
6101	0	0	0	0	0	0
6102	0	0	0	0	0	0
6103	0	0	0	0	0	0
6104	0	0	0	0	0	0
6105	0	0	0	0	0	0
6106	0	0	0	0	0	0
6107	0	0	0	0	0	0
6108	0	0	0	0	0	0
6109	0	0	0	0	0	0
6110	0	0	0	0	0	0
n	10	10	10	10	10	10

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

In-the-hand observation
Generation : F0 Sex : Female Week : 3 Period : Administration (non-mating group)
Dose : EES 0 mg/kg Species : Rat

Animal No.	Ease of removal from cage	Fur condition	Skin	Secretions-Eye, Nose	Exophthalmos	Palpebral closure	Mucosal membranes	Lacrimation
5101	0	0	0	0	0	0	0	0
5102	0	0	0	0	0	0	0	0
5103	0	0	0	0	0	0	0	0
5104	0	0	0	0	0	0	0	0
5105	0	0	0	0	0	0	0	0
5106	0	0	0	0	0	0	0	0
5107	0	0	0	0	0	0	0	0
5108	0	0	0	0	0	0	0	0
5109	0	0	0	0	0	0	0	0
5110	0	0	0	0	0	0	0	0
n	10	10	10	10	10	10	10	10

Animal No.	Piloerection	Pupil size	Salivation	Abnormal respiration	Vocalization	Reactivity to handling
5101	0	0	0	0	0	0
5102	0	0	0	0	0	0
5103	0	0	0	0	0	0
5104	0	0	0	0	0	0
5105	0	0	0	0	0	0
5106	0	0	0	0	0	0
5107	0	0	0	0	0	0
5108	0	0	0	0	0	0
5109	0	0	0	0	0	0
5110	0	0	0	0	0	0
n	10	10	10	10	10	10

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Study No. : R-1244

In-the-hand observation

Generation : F0 Sex : Female Week : 3 Period : Administration (non-mating group)

Dose : EES 50 mg/kg Species : Rat

Animal No.	Ease of removal from cage	Fur condition	Skin	Secretions-Eye, Nose	Exophthalmos	Palpebral closure	Mucosal membranes	Lacrimation
6101	0	0	0	0	0	0	0	0
6102	0	0	0	0	0	0	0	0
6103	0	0	0	0	0	0	0	0
6104	0	0	0	0	0	0	0	0
6105	0	0	0	0	0	0	0	0
6106	0	0	0	0	0	0	0	0
6107	0	0	0	0	0	0	0	0
6108	0	0	0	0	0	0	0	0
6109	0	0	0	0	0	0	0	0
6110	0	0	0	0	0	0	0	0
n	10	10	10	10	10	10	10	10

Animal No.	Piloerection	Pupil size	Salivation	Abnormal respiration	Vocalization	Reactivity to handling
6101	0	0	0	0	0	0
6102	0	0	0	0	0	0
6103	0	0	0	0	0	0
6104	0	0	0	0	0	0
6105	0	0	0	0	0	0
6106	0	0	0	0	0	0
6107	0	0	0	0	0	0
6108	0	0	0	0	0	0
6109	0	0	0	0	0	0
6110	0	0	0	0	0	0
n	10	10	10	10	10	10

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

In-the-hand observation
Generation : F0 Sex : Female Week : 4 Period : Administration (non-mating group)
Dose : EES 0 mg/kg Species : Rat

Animal No.	Ease of removal from cage	Fur condition	Skin	Secretions-Eye, Nose	Exophthalmos	Palpebral closure	Mucosal membranes	Lacrimation
5101	0	0	0	0	0	0	0	0
5102	0	0	0	0	0	0	0	0
5103	0	0	0	0	0	0	0	0
5104	0	0	0	0	0	0	0	0
5105	0	0	0	0	0	0	0	0
5106	0	0	0	0	0	0	0	0
5107	0	0	0	0	0	0	0	0
5108	0	0	0	0	0	0	0	0
5109	0	0	0	0	0	0	0	0
5110	0	0	0	0	0	0	0	0
n	10	10	10	10	10	10	10	10

Animal No.	Piloerection	Pupil size	Salivation	Abnormal respiration	Vocalization	Reactivity to handling
5101	0	0	0	0	0	0
5102	0	0	0	0	0	0
5103	0	0	0	0	0	0
5104	0	0	0	0	0	0
5105	0	0	0	0	0	0
5106	0	0	0	0	0	0
5107	0	0	0	0	0	0
5108	0	0	0	0	0	0
5109	0	0	0	0	0	0
5110	0	0	0	0	0	0
n	10	10	10	10	10	10

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

In-the-hand observation
Generation : F0 Sex : Female Week : 4 Period : Administration (non-mating group)
Dose : EES 50 mg/kg Species : Rat

Animal No.	Ease of removal from cage	Fur condition	Skin	Secretions-Eye, Nose	Exophthalmos	Palpebral closure	Mucosal membranes	Lacrimation
6101	0	0	0	0	0	0	0	0
6102	0	0	0	0	0	0	0	0
6103	0	0	0	0	0	0	0	0
6104	0	0	0	0	0	0	0	0
6105	0	0	0	0	0	0	0	0
6106	0	0	0	0	0	0	0	0
6107	0	0	0	0	0	0	0	0
6108	0	0	0	0	0	0	0	0
6109	0	0	0	0	0	0	0	0
6110	0	0	0	0	0	0	0	0
n	10	10	10	10	10	10	10	10

Animal No.	Piloerection	Pupil size	Salivation	Abnormal respiration	Vocalization	Reactivity to handling
6101	0	0	0	0	0	0
6102	0	0	0	0	0	0
6103	0	0	0	0	0	0
6104	0	0	0	0	0	0
6105	0	0	0	0	0	0
6106	0	0	0	0	0	0
6107	0	0	0	0	0	0
6108	0	0	0	0	0	0
6109	0	0	0	0	0	0
6110	0	0	0	0	0	0
n	10	10	10	10	10	10

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Study No. : R-1244

In-the-hand observation

Generation : F0 Sex : Female Week : 5 Period : Administration (non-mating group) Dose : EES 0 mg/kg Species : Rat

Animal No.	Ease of removal from cage	Fur condition	Skin	Secretions-Eye, Nose	Exophthalmos	Palpebral closure	Mucosal membranes	Lacrimation
5101	0	0	0	0	0	0	0	0
5102	0	0	0	0	0	0	0	0
5103	0	0	0	0	0	0	0	0
5104	0	0	0	0	0	0	0	0
5105	0	0	0	0	0	0	0	0
5106	0	0	0	0	0	0	0	0
5107	0	0	0	0	0	0	0	0
5108	0	0	0	0	0	0	0	0
5109	0	0	0	0	0	0	0	0
5110	0	0	0	0	0	0	0	0
n	10	10	10	10	10	10	10	10

Animal No.	Piloerection	Pupil size	Salivation	Abnormal respiration	Vocalization	Reactivity to handling
5101	0	0	0	0	0	0
5102	0	0	0	0	0	0
5103	0	0	0	0	0	0
5104	0	0	0	0	0	0
5105	0	0	0	0	0	0
5106	0	0	0	0	0	0
5107	0	0	0	0	0	0
5108	0	0	0	0	0	0
5109	0	0	0	0	0	0
5110	0	0	0	0	0	0
n	10	10	10	10	10	10

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

In-the-hand observation
Generation : F0 Sex : Female Week : 5 Period : Administration (non-mating group)
Dose : EES 50 mg/kg Species : Rat

Animal No.	Ease of removal from cage	Fur condition	Skin	Secretions-Eye, Nose	Exophthalmos	Palpebral closure	Mucosal membranes	Lacrimation
6101	0	0	0	0	0	0	0	0
6102	0	0	0	0	0	0	0	0
6103	0	0	0	0	0	0	0	0
6104	0	0	0	0	0	0	0	0
6105	0	0	0	0	0	0	0	0
6106	0	0	0	0	0	0	0	0
6107	0	0	0	0	0	0	0	0
6108	0	0	0	0	0	0	0	0
6109	0	0	0	0	0	0	0	0
6110	0	0	0	0	0	0	0	0
n	10	10	10	10	10	10	10	10

Animal No.	Piloerection	Pupil size	Salivation	Abnormal respiration	Vocalization	Reactivity to handling
6101	0	0	0	0	0	0
6102	0	0	0	0	0	0
6103	0	0	0	0	0	0
6104	0	0	0	0	0	0
6105	0	0	0	0	0	0
6106	0	0	0	0	0	0
6107	0	0	0	0	0	0
6108	0	0	0	0	0	0
6109	0	0	0	0	0	0
6110	0	0	0	0	0	0
n	10	10	10	10	10	10

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

In-the-hand observation
Generation : F0 Sex : Female Week : 6 Period : Administration (non-mating group)
Dose : EES 0 mg/kg Species : Rat

Animal No.	Ease of removal from cage	Fur condition	Skin	Secretions-Eye, Nose	Exophthalmos	Palpebral closure	Mucosal membranes	Lacrimation
5101	0	0	0	0	0	0	0	0
5102	0	0	0	0	0	0	0	0
5103	0	0	0	0	0	0	0	0
5104	0	0	0	0	0	0	0	0
5105	0	0	0	0	0	0	0	0
5106	0	0	0	0	0	0	0	0
5107	0	0	0	0	0	0	0	0
5108	0	0	0	0	0	0	0	0
5109	0	0	0	0	0	0	0	0
5110	0	0	0	0	0	0	0	0
n	10	10	10	10	10	10	10	10

Animal No.	Piloerection	Pupil size	Salivation	Abnormal respiration	Vocalization	Reactivity to handling
5101	0	0	0	0	0	0
5102	0	0	0	0	0	0
5103	0	0	0	0	0	0
5104	0	0	0	0	0	0
5105	0	0	0	0	0	0
5106	0	0	0	0	0	0
5107	0	0	0	0	0	0
5108	0	0	0	0	0	0
5109	0	0	0	0	0	0
5110	0	0	0	0	0	0
n	10	10	10	10	10	10

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Study No. : R-1244

In-the-hand observation

Generation : F0 Sex : Female Week : 6 Period : Administration (non-mating group)

Dose : EES 50 mg/kg Species : Rat

Animal No.	Ease of removal from cage	Fur condition	Skin	Secretions-Eye, Nose	Exophthalmos	Palpebral closure	Mucosal membranes	Lacrimation
6101	0	0	0	0	0	0	0	0
6102	0	0	0	0	0	0	0	0
6103	0	0	0	0	0	0	0	0
6104	0	0	0	0	0	0	0	0
6105	0	0	0	0	0	0	0	0
6106	0	0	0	0	0	0	0	0
6107	0	0	0	0	0	0	0	0
6108	0	0	0	0	0	0	0	0
6109	0	0	0	0	0	0	0	0
6110	0	0	0	0	0	0	0	0
n	10	10	10	10	10	10	10	10

Animal No.	Piloerection	Pupil size	Salivation	Abnormal respiration	Vocalization	Reactivity to handling
6101	0	0	0	0	0	0
6102	0	0	0	0	0	0
6103	0	0	0	0	0	0
6104	0	0	0	0	0	0
6105	0	0	0	0	0	0
6106	0	0	0	0	0	0
6107	0	0	0	0	0	0
6108	0	0	0	0	0	0
6109	0	0	0	0	0	0
6110	0	0	0	0	0	0
n	10	10	10	10	10	10

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

In-the-hand observation

Generation : F0 Sex : Male Week : 1 Period : Recovery Dose : EES 0 mg/kg Species : Rat

Animal No.	Ease of remov-al from cage	Fur condition	Skin	Secretions-Eye, Nose	Exophthalmos	Palpebral closure	Mucosal membranes	Lacrimation
1008	0	0	0	0	0	0	0	0
1009	0	0	0	0	0	0	0	0
1010	0	0	0	0	0	0	0	0
1011	0	0	0	0	0	0	0	0
1012	0	0	0	0	0	0	0	0
n	5	5	5	5	5	5	5	5

Animal No.	Piloerection	Pupil size	Salivation	Abnormal respiration	Vocalization	Reactivity to handling
1008	0	0	0	0	0	0
1009	0	0	0	0	0	0
1010	0	0	0	0	0	0
1011	0	0	0	0	0	0
1012	0	0	0	0	0	0
n	5	5	5	5	5	5

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

In-the-hand observation
Generation : F0 Sex : Male Week : 1 Period : Recovery
Dose : EES 50 mg/kg Species : Rat

Animal No.	Ease of removal from cage	Fur condition	Skin	Secretions-Eye, Nose	Exophthalmos	Palpebral closure	Mucosal membranes	Lacrimation
4008	0	0	0	0	0	0	0	0
4009	0	0	0	0	0	0	0	0
4010	0	0	0	0	0	0	0	0
4011	0	0	0	0	0	0	0	0
4012	0	0	0	0	0	0	0	0
n	5	5	5	5	5	5	5	5

Animal No.	Piloerection	Pupil size	Salivation	Abnormal respiration	Vocalization	Reactivity to handling
4008	0	0	0	0	0	0
4009	0	0	0	0	0	0
4010	0	0	0	0	0	0
4011	0	0	0	0	0	0
4012	0	0	0	0	0	0
n	5	5	5	5	5	5

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

In-the-hand observation

Generation : F0 Sex : Male Week : 2 Period : Recovery Dose : EES 0 mg/kg Species : Rat

Animal No.	Ease of remov-al from cage	Fur condition	Skin	Secretions-Eye, Nose	Exophthalmos	Palpebral closure	Mucosal membranes	Lacrimation
1008	0	0	0	0	0	0	0	0
1009	0	0	0	0	0	0	0	0
1010	0	0	0	0	0	0	0	0
1011	0	0	0	0	0	0	0	0
1012	0	0	0	0	0	0	0	0
n	5	5	5	5	5	5	5	5

Animal No.	Piloerection	Pupil size	Salivation	Abnormal respiration	Vocalization	Reactivity to handling
1008	0	0	0	0	0	0
1009	0	0	0	0	0	0
1010	0	0	0	0	0	0
1011	0	0	0	0	0	0
1012	0	0	0	0	0	0
n	5	5	5	5	5	5

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

In-the-hand observation

Generation : F0 Sex : Male Week : 2 Period : Recovery Dose : EES 50 mg/kg Species : Rat

Animal No.	Ease of removal from cage	Fur condition	Skin	Secretions-Eye, Nose	Exophthalmos	Palpebral closure	Mucosal membranes	Lacrimation
4008	0	0	0	0	0	0	0	0
4009	0	0	0	0	0	0	0	0
4010	0	0	0	0	0	0	0	0
4011	0	0	0	0	0	0	0	0
4012	0	0	0	0	0	0	0	0
n	5	5	5	5	5	5	5	5

Animal No.	Piloerection	Pupil size	Salivation	Abnormal respiration	Vocalization	Reactivity to handling
4008	0	0	0	0	0	0
4009	0	0	0	0	0	0
4010	0	0	0	0	0	0
4011	0	0	0	0	0	0
4012	0	0	0	0	0	0
n	5	5	5	5	5	5

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

In-the-hand observation

Generation : F0 Sex : Female Week : 1 Period : Recovery (non-mating group) Dose : EES 0 mg/kg Species : Rat

Animal No.	Ease of removal from cage	Fur condition	Skin	Secretions-Eye, Nose	Exophthalmos	Palpebral closure	Mucosal membranes	Lacrimation
5106	0	0	0	0	0	0	0	0
5107	0	0	0	0	0	0	0	0
5108	0	0	0	0	0	0	0	0
5109	0	0	0	0	0	0	0	0
5110	0	0	0	0	0	0	0	0
n	5	5	5	5	5	5	5	5

Animal No.	Piloerection	Pupil size	Salivation	Abnormal respiration	Vocalization	Reactivity to handling
5106	0	0	0	0	0	0
5107	0	0	0	0	0	0
5108	0	0	0	0	0	0
5109	0	0	0	0	0	0
5110	0	0	0	0	0	0
n	5	5	5	5	5	5

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

In-the-hand observation

Generation : F0 Sex : Female Week : 1 Period : Recovery (non-mating group) Dose : EES 50 mg/kg Species : Rat

Animal No.	Ease of removal from cage	Fur condition	Skin	Secretions-Eye, Nose	Exophthalmos	Palpebral closure	Mucosal membranes	Lacrimation
6106	0	0	0	0	0	0	0	0
6107	0	0	0	0	0	0	0	0
6108	0	0	0	0	0	0	0	0
6109	0	0	0	0	0	0	0	0
6110	0	0	0	0	0	0	0	0
n	5	5	5	5	5	5	5	5

Animal No.	Piloerection	Pupil size	Salivation	Abnormal respiration	Vocalization	Reactivity to handling
6106	0	0	0	0	0	0
6107	0	0	0	0	0	0
6108	0	0	0	0	0	0
6109	0	0	0	0	0	0
6110	0	0	0	0	0	0
n	5	5	5	5	5	5

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Study No. : R-1244

In-the-hand observation

Generation : F0 Sex : Female Week : 2 Period : Recovery (non-mating group) Dose : EES 0 mg/kg Species : Rat

Animal No.	Ease of removal from cage	Fur condition	Skin	Secretions-Eye, Nose	Exophthalmos	Palpebral closure	Mucosal membranes	Lacrimation
5106	0	0	0	0	0	0	0	0
5107	0	0	0	0	0	0	0	0
5108	0	0	0	0	0	0	0	0
5109	0	0	0	0	0	0	0	0
5110	0	0	0	0	0	0	0	0
n	5	5	5	5	5	5	5	5

Animal No.	Piloerection	Pupil size	Salivation	Abnormal respiration	Vocalization	Reactivity to handling
5106	0	0	0	0	0	0
5107	0	0	0	0	0	0
5108	0	0	0	0	0	0
5109	0	0	0	0	0	0
5110	0	0	0	0	0	0
n	5	5	5	5	5	5

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

In-the-hand observation

Period : Recovery (non-mating group)

Generation : F0 Sex : Female Week : 2 Dose : EES 50 mg/kg Species : Rat

Animal No.	Ease of removal from cage	Fur condition	Skin	Secretions-Eye, Nose	Exophthalmos	Palpebral closure	Mucosal membranes	Lacrimation
6106	0	0	0	0	0	0	0	0
6107	0	0	0	0	0	0	0	0
6108	0	0	0	0	0	0	0	0
6109	0	0	0	0	0	0	0	0
6110	0	0	0	0	0	0	0	0
n	5	5	5	5	5	5	5	5

Animal No.	Piloerection	Pupil size	Salivation	Abnormal respiration	Vocalization	Reactivity to handling
6106	0	0	0	0	0	0
6107	0	0	0	0	0	0
6108	0	0	0	0	0	0
6109	0	0	0	0	0	0
6110	0	0	0	0	0	0
n	5	5	5	5	5	5

Ease of removal from cage) -1: Atypically docile, 0: Easy, 1: Some resistance/avoidance, 2: Difficult, 3: Very difficult
Fur condition) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Skin) 0: Normal, 1: Slight, 2: Moderate, 3: Severe
Secretions-Eye, Nose) 0: Absent, 1: Present
Exophthalmos) 0: Absent, 1: Present
Palpebral closure) 0: Normal, 1: Slightly closed, 2: Half closed, 3: Completely closed
Mucosal membranes) 0: Normal, 1: Slight, 2: Moderate, 3: Marked
Lacrimation) 0: Absent, 1: Present
Piloerection) 0: Absent, 1: Present
Pupil size) -1: Miosis, 0: Normal, 1: Half opened pupil, 2: Mydriasis
Salivation) 0: None, 1: Slight, 2: Moderate, 3: Marked
Abnormal respiration) 0: None, 1: Slight, 2: Moderate, 3: Severe
Vocalization) 0: None, 1: Soft, 2: Moderate, 3: Loud/aggressive
Reactivity to handling) -1: Atypically docile, 0: Easy, 1: Slightly awkward, 2: Awkward, 3: Very Awkward
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Study No. : R-1244

Open field observation

Period : F0 before mating

Generation : F0 Sex : Male Week : 1 Dose : EES 0 mg/kg Species : Rat

Animal No.	Arousal	Convulsion	Abnormal behavior	Stereotypy	Gait	Posture	Grooming	Urination
1001	0	0	0	0	0	N	0	1
1002	0	0	0	0	0	N	0	0
1003	0	0	0	0	0	N	0	0
1004	0	0	0	0	0	N	0	0
1005	0	0	0	0	0	N	0	0
1006	0	0	0	0	0	N	0	0
1007	0	0	0	0	0	N	0	0
1008	0	0	0	0	0	N	0	0
1009	0	0	0	0	0	N	0	0
1010	0	0	0	0	0	N	0	0
1011	0	0	0	0	0	N	0	0
1012	0	0	0	0	0	N	0	0
n	12	12	12	12	12	12	12	12

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : F0 before mating

Generation : F0 Sex : Male Week : 1 Dose : EES 0 mg/kg Species : Rat

Animal No.	Rearing	Defecation count
1001	1	0
1002	6	0
1003	6	0
1004	4	0
1005	3	0
1006	11	0
1007	1	0
1008	5	0
1009	1	0
1010	6	0
1011	4	0
1012	5	0
n	12	12
Mean	4	0
S.D.	3	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Generation : F0 Sex : Male Week : 1 Period : F0 before mating Dose : EES 5 mg/kg Species : Rat

Animal No.	Arousal	Convulsion	Abnormal behavior	Stereotypy	Gait	Posture	Grooming	Urination
2001	0	0	0	0	0	N	0	0
2002	0	0	0	0	0	N	0	0
2003	0	0	0	0	0	N	0	0
2004	0	0	0	0	0	N	0	0
2005	0	0	0	0	0	N	0	0
2006	0	0	0	0	0	N	0	0
2007	0	0	0	0	0	N	0	0
2008	0	0	0	0	0	N	0	0
2009	0	0	0	0	0	N	0	1
2010	0	0	0	0	0	N	0	0
2011	0	0	0	0	0	N	0	0
2012	0	0	0	0	0	N	0	0
n	12	12	12	12	12	12	12	12

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : F0 before mating

Generation : F0 Sex : Male Week : 1 Dose : EES 5 mg/kg Species : Rat

Animal No.	Rearing	Defecation count
2001	2	0
2002	1	0
2003	4	0
2004	6	0
2005	3	0
2006	4	0
2007	2	0
2008	6	0
2009	5	0
2010	6	0
2011	2	0
2012	3	0
n	12	12
Mean	4	0
S.D.	2	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : F0 before mating

Generation : F0 Sex : Male Week : 1 Dose : EES 15 mg/kg Species : Rat

Animal No.	Arousal	Convulsion	Abnormal behavior	Stereotypy	Gait	Posture	Grooming	Urination
3001	0	0	0	0	0	N	0	0
3002	0	0	0	0	0	N	0	0
3003	0	0	0	0	0	N	0	0
3004	0	0	0	0	0	N	0	0
3005	0	0	0	0	0	N	0	0
3006	0	0	0	0	0	N	0	0
3007	0	0	0	0	0	N	0	1
3008	0	0	0	0	0	N	0	0
3009	0	0	0	0	0	N	0	0
3010	0	0	0	0	0	N	0	0
3011	0	0	0	0	0	N	0	0
3012	0	0	0	0	0	N	0	0
n	12	12	12	12	12	12	12	12

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : F0 before mating

Generation : F0 Sex : Male Week : 1 Dose : EES 15 mg/kg Species : Rat

Animal No.	Rearing	Defecation count
3001	7	0
3002	1	0
3003	2	0
3004	5	0
3005	4	0
3006	4	0
3007	3	0
3008	11	0
3009	4	0
3010	2	0
3011	3	0
3012	2	0
n	12	12
Mean	4	0
S.D.	3	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : F0 before mating

Generation : F0 Sex : Male Week : 1 Dose : EES 50 mg/kg Species : Rat

Animal No.	Arousal	Convulsion	Abnormal behavior	Stereotypy	Gait	Posture	Grooming	Urination
4001	0	0	0	0	0	N	0	0
4002	0	0	0	0	0	N	0	0
4003	0	0	0	0	0	N	0	0
4004	0	0	0	0	0	N	0	0
4005	0	0	0	0	0	N	0	0
4006	0	0	0	0	0	N	0	0
4007	0	0	0	0	0	N	0	0
4008	0	0	0	0	0	N	0	1
4009	0	0	0	0	0	N	0	0
4010	0	0	0	0	0	N	0	0
4011	0	0	0	0	0	N	0	0
4012	0	0	0	0	0	N	0	0
n	12	12	12	12	12	12	12	12

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : F0 before mating

Generation : F0 Sex : Male Week : 1 Dose : EES 50 mg/kg Species : Rat

Animal No.	Rearing	Defecation count
4001	5	0
4002	5	0
4003	6	0
4004	3	0
4005	2	0
4006	4	0
4007	4	0
4008	3	0
4009	5	0
4010	1	0
4011	5	0
4012	1	0
n	12	12
Mean	4	0
S.D.	2	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Generation : F0 Sex : Male Week : 2 Period : F0 before mating Dose : EES 0 mg/kg Species : Rat

Animal No.	Arousal	Convulsion	Abnormal behavior	Stereotypy	Gait	Posture	Grooming	Urination
1001	0	0	0	0	0	N	0	0
1002	0	0	0	0	0	N	0	0
1003	0	0	0	0	0	N	0	0
1004	0	0	0	0	0	N	0	0
1005	0	0	0	0	0	N	0	0
1006	0	0	0	0	0	N	0	0
1007	0	0	0	0	0	N	0	0
1008	0	0	0	0	0	N	0	0
1009	0	0	0	0	0	N	0	0
1010	0	0	0	0	0	N	0	0
1011	0	0	0	0	0	N	0	0
1012	0	0	0	0	0	N	0	0
n	12	12	12	12	12	12	12	12

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Open field observation Period : F0 before mating

Generation : F0 Sex : Male Week : 2 Dose : EES 0 mg/kg Species : Rat

Animal No.	Rearing	Defecation count
1001	4	0
1002	5	0
1003	5	0
1004	0	0
1005	1	0
1006	10	0
1007	1	0
1008	3	0
1009	8	0
1010	5	0
1011	4	0
1012	3	0
n	12	12
Mean	4	0
S.D.	3	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : F0 before mating

Generation : F0 Sex : Male Week : 2 Dose : EES 5 mg/kg Species : Rat

Animal No.	Arousal	Convulsion	Abnormal behavior	Stereotypy	Gait	Posture	Grooming	Urination
2001	0	0	0	0	0	N	0	1
2002	0	0	0	0	0	N	0	0
2003	0	0	0	0	0	N	0	0
2004	0	0	0	0	0	N	0	0
2005	0	0	0	0	0	N	0	0
2006	0	0	0	0	0	N	0	0
2007	0	0	0	0	0	N	0	0
2008	0	0	0	0	0	N	0	0
2009	0	0	0	0	0	N	0	0
2010	0	0	0	0	0	N	0	0
2011	0	0	0	0	0	N	0	0
2012	0	0	0	0	0	N	0	0
n	12	12	12	12	12	12	12	12

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Open field observation Period : F0 before mating

Generation : F0 Sex : Male Week : 2 Dose : EES 5 mg/kg Species : Rat

Animal No.	Rearing	Defecation count
2001	5	0
2002	1	0
2003	3	0
2004	1	0
2005	4	0
2006	2	0
2007	4	0
2008	6	0
2009	3	0
2010	2	0
2011	1	0
2012	1	0
n	12	12
Mean	3	0
S.D.	2	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : F0 before mating

Generation : F0 Sex : Male Week : 2 Dose : EES 15 mg/kg Species : Rat

Animal No.	Arousal	Convulsion	Abnormal behavior	Stereotypy	Gait	Posture	Grooming	Urination
3001	0	0	0	0	0	N	0	0
3002	0	0	0	0	0	N	0	0
3003	0	0	0	0	0	N	0	0
3004	0	0	0	0	0	N	0	0
3005	0	0	0	0	0	N	0	0
3006	0	0	0	0	0	N	0	0
3007	0	0	0	0	0	N	0	0
3008	0	0	0	0	0	N	0	0
3009	0	0	0	0	0	N	0	0
3010	0	0	0	0	0	N	0	0
3011	0	0	0	0	0	N	0	0
3012	0	0	0	0	0	N	0	1
n	12	12	12	12	12	12	12	12

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Open field observation Period : F0 before mating
Generation : F0 Sex : Male Week : 2 Dose : EES 15 mg/kg Species : Rat

Animal No.	Rearing	Defecation count
3001	5	0
3002	2	0
3003	0	0
3004	6	0
3005	2	0
3006	1	0
3007	3	0
3008	5	0
3009	3	0
3010	4	0
3011	2	0
3012	2	0
n	12	12
Mean	3	0
S.D.	2	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : F0 before mating

Generation : F0 Sex : Male Week : 2 Dose : EES 50 mg/kg Species : Rat

Animal No.	Arousal	Convulsion	Abnormal behavior	Stereotypy	Gait	Posture	Grooming	Urination
4001	0	0	0	0	0	N	0	0
4002	0	0	0	0	0	N	0	0
4003	0	0	0	0	0	N	0	0
4004	0	0	0	0	0	N	0	0
4005	0	0	0	0	0	N	0	0
4006	0	0	0	0	0	N	0	0
4007	0	0	0	0	0	N	0	0
4008	0	0	0	0	0	N	0	0
4009	0	0	0	0	0	N	0	0
4010	0	0	0	0	0	N	0	0
4011	0	0	0	0	0	N	0	0
4012	0	0	0	0	0	N	0	0
n	12	12	12	12	12	12	12	12

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Open field observation Period : F0 before mating

Generation : F0 Sex : Male Week : 2 Dose : EES 50 mg/kg Species : Rat

Animal No.	Rearing	Defecation count
4001	6	0
4002	5	0
4003	2	0
4004	1	0
4005	3	0
4006	2	0
4007	1	0
4008	4	0
4009	4	0
4010	3	0
4011	5	0
4012	4	0
n	12	12
Mean	3	0
S.D.	2	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : F0 mating

Generation : F0 Sex : Male Week : 3 Dose : EES 0 mg/kg Species : Rat

Animal No.	Arousal	Convulsion	Abnormal behavior	Stereotypy	Gait	Posture	Grooming	Urination
1001	0	0	0	0	0	N	0	0
1002	0	0	0	0	0	N	0	0
1003	0	0	0	0	0	N	0	0
1004	0	0	0	0	0	N	0	0
1005	0	0	0	0	0	N	0	0
1006	0	0	0	0	0	N	0	0
1007	0	0	0	0	0	N	0	1
1008	0	0	0	0	0	N	0	0
1009	0	0	0	0	0	N	0	0
1010	0	0	0	0	0	N	0	0
1011	0	0	0	0	0	N	0	0
1012	0	0	0	0	0	N	0	0
n	12	12	12	12	12	12	12	12

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : F0 mating

Generation : F0 Sex : Male Week : 3 Dose : EES 0 mg/kg Species : Rat

Animal No.	Rearing	Defecation count
1001	4	0
1002	6	0
1003	5	0
1004	1	0
1005	2	0
1006	5	0
1007	1	0
1008	3	0
1009	3	0
1010	6	0
1011	6	0
1012	3	0
n	12	12
Mean	4	0
S.D.	2	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : F0 mating

Generation : F0 Sex : Male Week : 3 Dose : EES 5 mg/kg Species : Rat

Animal No.	Arousal	Convulsion	Abnormal behavior	Stereotypy	Gait	Posture	Grooming	Urination
2001	0	0	0	0	0	N	0	0
2002	0	0	0	0	0	N	0	0
2003	0	0	0	0	0	N	0	1
2004	0	0	0	0	0	N	0	0
2005	0	0	0	0	0	N	0	0
2006	0	0	0	0	0	N	0	0
2007	0	0	0	0	0	N	0	0
2008	0	0	0	0	0	N	0	0
2009	0	0	0	0	0	N	0	0
2010	0	0	0	0	0	N	0	0
2011	0	0	0	0	0	N	0	0
2012	0	0	0	0	0	N	0	0
n	12	12	12	12	12	12	12	12

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : F0 mating

Generation : F0 Sex : Male Week : 3 Dose : EES 5 mg/kg Species : Rat

Animal No.	Rearing	Defecation count
2001	0	0
2002	2	0
2003	2	0
2004	3	0
2005	9	0
2006	4	0
2007	3	0
2008	5	0
2009	2	0
2010	0	0
2011	0	0
2012	0	0
n	12	12
Mean	3	0
S.D.	3	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : F0 mating

Generation : F0 Sex : Male Week : 3 Dose : EES 15 mg/kg Species : Rat

Animal No.	Arousal	Convulsion	Abnormal behavior	Stereotypy	Gait	Posture	Grooming	Urination
3001	0	0	0	0	0	N	0	0
3002	0	0	0	0	0	N	0	0
3003	0	0	0	0	0	N	0	0
3004	0	0	0	0	0	N	0	0
3005	0	0	0	0	0	N	0	0
3006	0	0	0	0	0	N	0	0
3007	0	0	0	0	0	N	0	1
3008	0	0	0	0	0	N	0	0
3009	0	0	0	0	0	N	0	0
3010	0	0	0	0	0	N	0	0
3011	0	0	0	0	0	N	0	0
3012	0	0	0	0	0	N	0	0
n	12	12	12	12	12	12	12	12

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : F0 mating

Generation : F0 Sex : Male Week : 3 Dose : EES 15 mg/kg Species : Rat

Animal No.	Rearing	Defecation count
3001	4	0
3002	1	0
3003	0	0
3004	7	0
3005	0	0
3006	1	0
3007	0	0
3008	8	0
3009	0	0
3010	4	0
3011	1	0
3012	0	0
n	12	12
Mean	2	0
S.D.	3	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : F0 mating

Generation : F0 Sex : Male Week : 3 Dose : EES 50 mg/kg Species : Rat

Animal No.	Arousal	Convulsion	Abnormal behavior	Stereotypy	Gait	Posture	Grooming	Urination
4001	0	0	0	0	0	N	0	0
4002	0	0	0	0	0	N	0	0
4003	0	0	0	0	0	N	0	0
4004	0	0	0	0	0	N	0	0
4005	0	0	0	0	0	N	0	0
4006	0	0	0	0	0	N	0	0
4007	0	0	0	0	0	N	0	0
4008	0	0	0	0	0	N	0	0
4009	0	0	0	0	0	N	0	0
4010	0	0	0	0	0	N	0	0
4011	0	0	0	0	0	N	0	0
4012	0	0	0	0	0	N	0	0
n	12	12	12	12	12	12	12	12

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Open field observation Period : F0 mating
Generation : F0 Sex : Male Week : 3 Dose : EES 50 mg/kg Species : Rat

Animal No.	Rearing	Defecation count
4001	4	0
4002	3	0
4003	3	0
4004	2	0
4005	2	0
4006	3	0
4007	5	0
4008	3	0
4009	5	0
4010	2	0
4011	1	0
4012	2	0
n	12	12
Mean	3	0
S.D.	1	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : F0 mating

Generation : F0 Sex : Male Week : 4 Dose : EES 0 mg/kg Species : Rat

Animal No.	Arousal	Convulsion	Abnormal behavior	Stereotypy	Gait	Posture	Grooming	Urination
1001	0	0	0	0	0	N	0	0
1002	0	0	0	0	0	N	0	0
1003	0	0	0	0	0	N	0	0
1004	0	0	0	0	0	N	0	0
1005	0	0	0	0	0	N	0	0
1006	0	0	0	0	0	N	0	1
1007	0	0	0	0	0	N	0	0
1008	0	0	0	0	0	N	0	0
1009	0	0	0	0	0	N	0	0
1010	0	0	0	0	0	N	0	0
1011	0	0	0	0	0	N	0	0
1012	0	0	0	0	0	N	0	0
n	12	12	12	12	12	12	12	12

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : F0 mating

Generation : F0 Sex : Male Week : 4 Dose : EES 0 mg/kg Species : Rat

Animal No.	Rearing	Defecation count
1001	3	0
1002	6	0
1003	5	0
1004	1	0
1005	2	0
1006	9	0
1007	0	0
1008	1	0
1009	4	0
1010	1	0
1011	4	0
1012	3	0
n	12	12
Mean	3	0
S.D.	3	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : F0 mating

Generation : F0 Sex : Male Week : 4 Dose : EES 5 mg/kg Species : Rat

Animal No.	Arousal	Convulsion	Abnormal behavior	Stereotypy	Gait	Posture	Grooming	Urination
2001	0	0	0	0	0	N	0	0
2002	0	0	0	0	0	N	0	0
2003	0	0	0	0	0	N	0	0
2004	0	0	0	0	0	N	0	0
2005	0	0	0	0	0	N	0	0
2006	0	0	0	0	0	N	0	0
2007	0	0	0	0	0	N	0	0
2008	0	0	0	0	0	N	0	0
2009	0	0	0	0	0	N	0	0
2010	0	0	0	0	0	N	0	0
2011	0	0	0	0	0	N	0	0
2012	0	0	0	0	0	N	0	0
n	12	12	12	12	12	12	12	12

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Open field observation Period : F0 mating
Generation : F0 Sex : Male Week : 4 Dose : EES 5 mg/kg Species : Rat

Animal No.	Rearing	Defecation count
2001	0	0
2002	0	0
2003	3	0
2004	7	0
2005	4	0
2006	3	0
2007	5	0
2008	7	0
2009	2	0
2010	1	0
2011	3	0
2012	1	0
n	12	12
Mean	3	0
S.D.	2	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : F0 mating

Generation : F0 Sex : Male Week : 4 Dose : EES 15 mg/kg Species : Rat

Animal No.	Arousal	Convulsion	Abnormal behavior	Stereotypy	Gait	Posture	Grooming	Urination
3001	0	0	0	0	0	N	0	1
3002	0	0	0	0	0	N	0	0
3003	0	0	0	0	0	N	0	0
3004	0	0	0	0	0	N	0	0
3005	0	0	0	0	0	N	0	1
3006	0	0	0	0	0	N	0	0
3007	0	0	0	0	0	N	0	0
3008	0	0	0	0	0	N	0	0
3009	0	0	0	0	0	N	0	0
3010	0	0	0	0	0	N	0	0
3011	0	0	0	0	0	N	0	0
3012	0	0	0	0	0	N	0	0
n	12	12	12	12	12	12	12	12

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Open field observation Period : F0 mating

Generation : F0 Sex : Male Week : 4 Dose : EES 15 mg/kg Species : Rat

Animal No.	Rearing	Defecation count
3001	3	0
3002	0	0
3003	1	0
3004	5	0
3005	2	0
3006	4	0
3007	2	0
3008	6	0
3009	2	0
3010	1	0
3011	1	0
3012	0	0
n	12	12
Mean	2	0
S.D.	2	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 2 - 183 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Open field observation Period : F0 mating

Generation : F0 Sex : Male Week : 4 Dose : EES 50 mg/kg Species : Rat

Animal No.	Arousal	Convulsion	Abnormal behavior	Stereotypy	Gait	Posture	Grooming	Urination
4001	0	0	0	0	0	N	0	0
4002	0	0	0	0	0	N	0	0
4003	0	0	0	0	0	N	0	1
4004	0	0	0	0	0	N	0	0
4005	0	0	0	0	0	N	0	1
4006	0	0	0	0	0	N	0	0
4007	0	0	0	0	0	N	0	0
4008	0	0	0	0	0	N	0	0
4009	0	0	0	0	0	N	0	0
4010	0	0	0	0	0	N	0	0
4011	0	0	0	0	0	N	0	0
4012	0	0	0	0	0	N	0	0
n	12	12	12	12	12	12	12	12

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : F0 mating

Generation : F0 Sex : Male Week : 4 Dose : EES 50 mg/kg Species : Rat

Animal No.	Rearing	Defecation count
4001	4	0
4002	1	0
4003	5	0
4004	2	0
4005	5	0
4006	3	0
4007	3	0
4008	2	0
4009	4	0
4010	1	0
4011	5	0
4012	4	0
n	12	12
Mean	3	0
S.D.	1	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : F0 mating

Generation : F0 Sex : Male Week : 5 Dose : EES 0 mg/kg Species : Rat

Animal No.	Arousal	Convulsion	Abnormal behavior	Stereotypy	Gait	Posture	Grooming	Urination
1001	0	0	0	0	0	N	0	0
1002	0	0	0	0	0	N	0	0
1003	0	0	0	0	0	N	0	0
1004	0	0	0	0	0	N	0	0
1005	0	0	0	0	0	N	0	0
1006	0	0	0	0	0	N	0	0
1007	0	0	0	0	0	N	0	0
1008	0	0	0	0	0	N	0	0
1009	0	0	0	0	0	N	0	0
1010	0	0	0	0	0	N	0	0
1011	0	0	0	0	0	N	0	0
1012	0	0	0	0	0	N	0	0
n	12	12	12	12	12	12	12	12

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Open field observation Period : F0 mating
Generation : F0 Sex : Male Week : 5 Dose : EES 0 mg/kg Species : Rat

Animal No.	Rearing	Defecation count
1001	4	0
1002	1	0
1003	3	0
1004	1	0
1005	1	0
1006	8	0
1007	0	0
1008	3	0
1009	9	0
1010	9	0
1011	6	0
1012	4	0
n	12	12
Mean	4	0
S.D.	3	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation — Period : F0 mating

Generation : F0 — Sex : Male — Week : 5 — Dose : EES 5 mg/kg — Species : Rat

Animal No.	Arousal	Convulsion	Abnormal behavior	Stereotypy	Gait	Posture	Grooming	Urination
2001	0	0	0	0	0	N	0	0
2002	0	0	0	0	0	N	0	0
2003	0	0	0	0	0	N	0	1
2004	0	0	0	0	0	N	0	0
2005	0	0	0	0	0	N	0	0
2006	0	0	0	0	0	N	0	0
2007	0	0	0	0	0	N	0	0
2008	0	0	0	0	0	N	0	0
2009	0	0	0	0	0	N	0	0
2010	0	0	0	0	0	N	0	0
2011	0	0	0	0	0	N	0	1
2012	0	0	0	0	0	N	0	0
n	12	12	12	12	12	12	12	12

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : F0 mating

Generation : F0 Sex : Male Week : 5 Dose : EES 5 mg/kg Species : Rat

Animal No.	Rearing	Defecation count
2001	1	0
2002	0	0
2003	2	0
2004	4	0
2005	6	0
2006	5	0
2007	2	0
2008	8	0
2009	3	0
2010	2	0
2011	4	0
2012	0	0
n	12	12
Mean	3	0
S.D.	2	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 2 - 189 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Open field observation Period : F0 mating

Generation : F0 Sex : Male Week : 5 Dose : EES 15 mg/kg Species : Rat

Animal No.	Arousal	Convulsion	Abnormal behavior	Stereotypy	Gait	Posture	Grooming	Urination
3001	0	0	0	0	0	N	0	1
3002	0	0	0	0	0	N	0	0
3003	0	0	0	0	0	N	0	0
3004	0	0	0	0	0	N	0	0
3005	0	0	0	0	0	N	0	0
3006	0	0	0	0	0	N	0	0
3007	0	0	0	0	0	N	0	0
3008	0	0	0	0	0	N	0	0
3009	0	0	0	0	0	N	0	1
3010	0	0	0	0	0	N	0	0
3011	0	0	0	0	0	N	0	0
3012	0	0	0	0	0	N	0	0
n	12	12	12	12	12	12	12	12

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Open field observation Period : F0 mating
Generation : F0 Sex : Male Week : 5 Dose : EES 15 mg/kg Species : Rat

Animal No.	Rearing	Defecation count
3001	2	0
3002	2	0
3003	1	0
3004	6	0
3005	0	0
3006	2	0
3007	4	0
3008	4	0
3009	3	0
3010	0	0
3011	1	0
3012	2	0
n	12	12
Mean	2	0
S.D.	2	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : F0 mating

Generation : F0 Sex : Male Week : 5 Dose : EES 50 mg/kg Species : Rat

Animal No.	Arousal	Convulsion	Abnormal behavior	Stereotypy	Gait	Posture	Grooming	Urination
4001	0	0	0	0	0	N	0	0
4002	0	0	0	0	0	N	0	0
4003	0	0	0	0	0	N	0	0
4004	0	0	0	0	0	N	0	0
4005	0	0	0	0	0	N	0	0
4006	0	0	0	0	0	N	0	0
4007	0	0	0	0	0	N	0	0
4008	0	0	0	0	0	N	0	0
4009	0	0	0	0	0	N	0	0
4010	0	0	0	0	0	N	0	0
4011	0	0	0	0	0	N	0	0
4012	0	0	0	0	0	N	0	0
n	12	12	12	12	12	12	12	12

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Open field observation Period : F0 mating
Generation : F0 Sex : Male Week : 5 Dose : EES 50 mg/kg Species : Rat

Animal No.	Rearing	Defecation count
4001	1	0
4002	1	0
4003	7	0
4004	1	0
4005	2	0
4006	1	0
4007	3	0
4008	5	0
4009	6	0
4010	3	0
4011	5	0
4012	3	0
n	12	12
Mean	3	0
S.D.	2	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Study No. : R-1244

Open field observation

Period : F0 mating

Generation : F0 Sex : Male Week : 6 Dose : EES 0 mg/kg Species : Rat

Animal No.	Arousal	Convulsion	Abnormal behavior	Stereotypy	Gait	Posture	Grooming	Urination
1001	0	0	0	0	0	N	0	1
1002	0	0	0	0	0	N	0	0
1003	0	0	0	0	0	N	0	1
1004	0	0	0	0	0	N	0	0
1005	0	0	0	0	0	N	0	0
1006	0	0	0	0	0	N	0	0
1007	0	0	0	0	0	N	0	0
1008	0	0	0	0	0	N	0	0
1009	0	0	0	0	0	N	0	1
1010	0	0	0	0	0	N	0	0
1011	0	0	0	0	0	N	0	0
1012	0	0	0	0	0	N	0	1
n	12	12	12	12	12	12	12	12

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : F0 mating

Generation : F0 Sex : Male Week : 6 Dose : EES 0 mg/kg Species : Rat

Animal No.	Rearing	Defecation count
1001	6	0
1002	5	0
1003	3	0
1004	4	0
1005	3	0
1006	8	0
1007	3	0
1008	2	0
1009	6	0
1010	5	0
1011	3	0
1012	3	0
n	12	12
Mean	4	0
S.D.	2	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : F0 mating

Generation : F0 Sex : Male Week : 6 Dose : EES 5 mg/kg Species : Rat

Animal No.	Arousal	Convulsion	Abnormal behavior	Stereotypy	Gait	Posture	Grooming	Urination
2001	0	0	0	0	0	N	0	1
2002	0	0	0	0	0	N	0	1
2003	0	0	0	0	0	N	0	1
2004	0	0	0	0	0	N	0	0
2005	0	0	0	0	0	N	0	1
2006	0	0	0	0	0	N	0	0
2007	0	0	0	0	0	N	0	0
2008	0	0	0	0	0	N	0	1
2009	0	0	0	0	0	N	0	0
2010	0	0	0	0	0	N	0	1
2011	0	0	0	0	0	N	0	0
2012	0	0	0	0	0	N	0	0
n	12	12	12	12	12	12	12	12

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Open field observation Period : F0 mating

Generation : F0 Sex : Male Week : 6 Dose : EES 5 mg/kg Species : Rat

Animal No.	Rearing	Defecation count
2001	0	0
2002	1	0
2003	7	0
2004	5	0
2005	4	0
2006	5	0
2007	7	0
2008	13	0
2009	2	0
2010	5	0
2011	4	0
2012	4	0
n	12	12
Mean	5	0
S.D.	3	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : F0 mating

Generation : F0 Sex : Male Week : 6 Dose : EES 15 mg/kg Species : Rat

Animal No.	Arousal	Convulsion	Abnormal behavior	Stereotypy	Gait	Posture	Grooming	Urination
3001	0	0	0	0	0	N	0	1
3002	0	0	0	0	0	N	0	0
3003	0	0	0	0	0	N	0	0
3004	0	0	0	0	0	N	0	0
3005	0	0	0	0	0	N	0	0
3006	0	0	0	0	0	N	0	0
3007	0	0	0	0	0	N	0	1
3008	0	0	0	0	0	N	0	1
3009	0	0	0	0	0	N	0	1
3010	0	0	0	0	0	N	0	1
3011	0	0	0	0	0	N	0	1
3012	0	0	0	0	0	N	0	1
n	12	12	12	12	12	12	12	12

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : F0 mating

Generation : F0 Sex : Male Week : 6 Dose : EES 15 mg/kg Species : Rat

Animal No.	Rearing	Defecation count
3001	4	0
3002	3	0
3003	2	0
3004	3	0
3005	2	0
3006	8	0
3007	0	0
3008	8	0
3009	3	0
3010	3	0
3011	1	0
3012	2	0
n	12	12
Mean	3	0
S.D.	2	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : F0 mating

Generation : F0 Sex : Male Week : 6 Dose : EES 50 mg/kg Species : Rat

Animal No.	Arousal	Convulsion	Abnormal behavior	Stereotypy	Gait	Posture	Grooming	Urination
4001	0	0	0	0	0	N	0	0
4002	0	0	0	0	0	N	0	0
4003	0	0	0	0	0	N	0	0
4004	0	0	0	0	0	N	0	0
4005	0	0	0	0	0	N	0	0
4006	0	0	0	0	0	N	0	0
4007	0	0	0	0	0	N	0	0
4008	0	0	0	0	0	N	0	1
4009	0	0	0	0	0	N	0	0
4010	0	0	0	0	0	N	0	1
4011	0	0	0	0	0	N	0	0
4012	0	0	0	0	0	N	0	0
n	12	12	12	12	12	12	12	12

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Open field observation Period : F0 mating
Generation : F0 Sex : Male Week : 6 Dose : EES 50 mg/kg Species : Rat

Animal No.	Rearing	Defecation count
4001	7	0
4002	1	0
4003	3	0
4004	4	0
4005	3	0
4006	3	0
4007	5	0
4008	7	0
4009	6	0
4010	3	0
4011	10	0
4012	1	0
n	12	12
Mean	4	0
S.D.	3	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 2 - 201 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Open field observation Period : F0 before mating

Generation : F0 Sex : Female Week : 1 Dose : EES 0 mg/kg Species : Rat

Animal No.	Arousal	Convulsion	Abnormal behavior	Stereotypy	Gait	Posture	Grooming	Urination
1101	0	0	0	0	0	N	0	0
1102	0	0	0	0	0	N	0	0
1103	0	0	0	0	0	N	0	0
1104	0	0	0	0	0	N	0	0
1105	0	0	0	0	0	N	0	0
1106	0	0	0	0	0	N	0	0
1107	0	0	0	0	0	N	0	0
1108	0	0	0	0	0	N	0	0
1109	0	0	0	0	0	N	0	0
1110	0	0	0	0	0	N	0	0
1111	0	0	0	0	0	N	0	0
1112	0	0	0	0	0	N	0	0
n	12	12	12	12	12	12	12	12

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : F0 before mating

Generation : F0 Sex : Female Week : 1 Dose : EES 0 mg/kg Species : Rat

Animal No.	Rearing	Defecation count
1101	9	0
1102	10	0
1103	10	0
1104	3	0
1105	8	0
1106	8	0
1107	4	0
1108	7	0
1109	3	0
1110	10	0
1111	5	0
1112	6	0
n	12	12
Mean	7	0
S.D.	3	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : F0 before mating

Generation : F0 Sex : Female Week : 1 Dose : EES 5 mg/kg Species : Rat

Animal No.	Arousal	Convulsion	Abnormal behavior	Stereotypy	Gait	Posture	Grooming	Urination
2101	0	0	0	0	0	N	0	0
2102	0	0	0	0	0	N	0	0
2103	0	0	0	0	0	N	0	0
2104	0	0	0	0	0	N	0	0
2105	0	0	0	0	0	N	0	0
2106	0	0	0	0	0	N	0	0
2107	0	0	0	0	0	N	0	0
2108	0	0	0	0	0	N	0	0
2109	0	0	0	0	0	N	0	0
2110	0	0	0	0	0	N	0	0
2111	0	0	0	0	0	N	0	0
2112	0	0	0	0	0	N	0	0
n	12	12	12	12	12	12	12	12

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : F0 before mating

Generation : F0 Sex : Female Week : 1 Dose : EES 5 mg/kg Species : Rat

Animal No.	Rearing	Defecation count
2101	8	0
2102	9	0
2103	7	0
2104	8	0
2105	10	0
2106	7	0
2107	7	0
2108	5	0
2109	9	0
2110	8	0
2111	6	0
2112	6	0
n	12	12
Mean	8	0
S.D.	1	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : F0 before mating

Generation : F0 Sex : Female Week : 1 Dose : EES 15 mg/kg Species : Rat

Animal No.	Arousal	Convulsion	Abnormal behavior	Stereotypy	Gait	Posture	Grooming	Urination
3101	0	0	0	0	0	N	0	0
3102	0	0	0	0	0	N	0	0
3103	0	0	0	0	0	N	0	0
3104	0	0	0	0	0	N	0	0
3105	0	0	0	0	0	N	0	0
3106	0	0	0	0	0	N	0	0
3107	0	0	0	0	0	N	0	0
3108	0	0	0	0	0	N	0	0
3109	0	0	0	0	0	N	0	0
3110	0	0	0	0	0	N	0	0
3111	0	0	0	0	0	N	0	0
3112	0	0	0	0	0	N	0	0
n	12	12	12	12	12	12	12	12

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : F0 before mating

Generation : F0 Sex : Female Week : 1 Dose : EES 15 mg/kg Species : Rat

Animal No.	Rearing	Defecation count
3101	3	0
3102	10	0
3103	6	0
3104	6	0
3105	6	0
3106	9	0
3107	8	0
3108	4	0
3109	5	0
3110	3	0
3111	7	0
3112	8	0
n	12	12
Mean	6	0
S.D.	2	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : F0 before mating

Generation : F0 Sex : Female Week : 1 Dose : EES 50 mg/kg Species : Rat

Animal No.	Arousal	Convulsion	Abnormal behavior	Stereotypy	Gait	Posture	Grooming	Urination
4101	0	0	0	0	0	N	0	0
4102	0	0	0	0	0	N	0	0
4103	0	0	0	0	0	N	0	0
4104	0	0	0	0	0	N	0	0
4105	0	0	0	0	0	N	0	0
4106	0	0	0	0	0	N	0	0
4107	0	0	0	0	0	N	0	0
4108	0	0	0	0	0	N	0	0
4109	0	0	0	0	0	N	0	0
4110	0	0	0	0	0	N	0	0
4111	0	0	0	0	0	N	0	0
4112	0	0	0	0	0	N	0	0
n	12	12	12	12	12	12	12	12

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Generation : F0 Sex : Female Week : 1 Period : F0 before mating Dose : EES 50 mg/kg Species : Rat

Animal No.	Rearing	Defecation count
4101	5	0
4102	6	0
4103	9	0
4104	4	0
4105	6	0
4106	6	0
4107	6	0
4108	8	0
4109	5	0
4110	5	0
4111	5	0
4112	5	0
n	12	12
Mean	6	0
S.D.	1	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : F0 before mating

Generation : F0 Sex : Female Week : 2 Dose : EES 0 mg/kg Species : Rat

Animal No.	Arousal	Convulsion	Abnormal behavior	Stereotypy	Gait	Posture	Grooming	Urination
1101	0	0	0	0	0	N	0	0
1102	0	0	0	0	0	N	0	0
1103	0	0	0	0	0	N	0	0
1104	0	0	0	0	0	N	0	0
1105	0	0	0	0	0	N	0	0
1106	0	0	0	0	0	N	0	0
1107	0	0	0	0	0	N	0	0
1108	0	0	0	0	0	N	0	0
1109	0	0	0	0	0	N	0	0
1110	0	0	0	0	0	N	0	0
1111	0	0	0	0	0	N	0	0
1112	0	0	0	0	0	N	0	0
n	12	12	12	12	12	12	12	12

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : F0 before mating

Generation : F0 Sex : Female Week : 2 Dose : EES 0 mg/kg Species : Rat

Animal No.	Rearing	Defecation count
1101	5	0
1102	9	0
1103	7	0
1104	4	0
1105	2	0
1106	8	0
1107	4	0
1108	7	0
1109	6	0
1110	8	0
1111	7	0
1112	6	0
n	12	12
Mean	6	0
S.D.	2	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 2 - 211 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Open field observation Period : F0 before mating

Generation : F0 Sex : Female Week : 2 Dose : EES 5 mg/kg Species : Rat

Animal No.	Arousal	Convulsion	Abnormal behavior	Stereotypy	Gait	Posture	Grooming	Urination
2101	0	0	0	0	0	N	0	0
2102	0	0	0	0	0	N	0	0
2103	0	0	0	0	0	N	0	0
2104	0	0	0	0	0	N	0	0
2105	0	0	0	0	0	N	0	0
2106	0	0	0	0	0	N	0	0
2107	0	0	0	0	0	N	0	0
2108	0	0	0	0	0	N	0	0
2109	0	0	0	0	0	N	0	0
2110	0	0	0	0	0	N	0	0
2111	0	0	0	0	0	N	0	0
2112	0	0	0	0	0	N	0	0
n	12	12	12	12	12	12	12	12

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : F0 before mating

Generation : F0 Sex : Female Week : 2 Dose : EES 5 mg/kg Species : Rat

Animal No.	Rearing	Defecation count
2101	4	0
2102	5	0
2103	8	0
2104	6	0
2105	5	0
2106	4	0
2107	5	0
2108	7	0
2109	12	0
2110	9	0
2111	8	0
2112	3	0
n	12	12
Mean	6	0
S.D.	3	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : F0 before mating

Generation : F0 Sex : Female Week : 2 Dose : EES 15 mg/kg Species : Rat

Animal No.	Arousal	Convulsion	Abnormal behavior	Stereotypy	Gait	Posture	Grooming	Urination
3101	0	0	0	0	0	N	0	0
3102	0	0	0	0	0	N	0	0
3103	0	0	0	0	0	N	0	0
3104	0	0	0	0	0	N	0	0
3105	0	0	0	0	0	N	0	0
3106	0	0	0	0	0	N	0	0
3107	0	0	0	0	0	N	0	0
3108	0	0	0	0	0	N	0	0
3109	0	0	0	0	0	N	0	0
3110	0	0	0	0	0	N	0	0
3111	0	0	0	0	0	N	0	0
3112	0	0	0	0	0	N	0	0
n	12	12	12	12	12	12	12	12

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Generation : F0 Sex : Female Week : 2 Period : F0 before mating Dose : EES 15 mg/kg Species : Rat

Animal No.	Rearing	Defecation count
3101	5	0
3102	3	0
3103	5	0
3104	3	0
3105	10	0
3106	7	0
3107	6	0
3108	4	0
3109	10	0
3110	8	0
3111	8	0
3112	9	0
n	12	12
Mean	7	0
S.D.	3	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : F0 before mating

Generation : F0 Sex : Female Week : 2 Dose : EES 50 mg/kg Species : Rat

Animal No.	Arousal	Convulsion	Abnormal behavior	Stereotypy	Gait	Posture	Grooming	Urination
4101	0	0	0	0	0	N	0	0
4102	0	0	0	0	0	N	0	0
4103	0	0	0	0	0	N	0	0
4104	0	0	0	0	0	N	0	0
4105	0	0	0	0	0	N	0	0
4106	0	0	0	0	0	N	0	0
4107	0	0	0	0	0	N	0	0
4108	0	0	0	0	0	N	0	0
4109	0	0	0	0	0	N	0	0
4110	0	0	0	0	0	N	0	0
4111	0	0	0	0	0	N	0	0
4112	0	0	0	0	0	N	0	0
n	12	12	12	12	12	12	12	12

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : F0 before mating

Generation : F0 Sex : Female Week : 2 Dose : EES 50 mg/kg Species : Rat

Animal No.	Rearing	Defecation count
4101	4	0
4102	8	0
4103	9	0
4104	6	0
4105	7	0
4106	4	0
4107	5	0
4108	7	0
4109	7	0
4110	9	0
4111	6	0
4112	6	0
n	12	12
Mean	7	0
S.D.	2	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : F0 gestation

Generation : F0 Sex : Female Day : 1 Dose : EES 0 mg/kg Species : Rat

Animal No.	Arousal	Convulsion	Abnormal behavior	Stereotypy	Gait	Posture	Grooming	Urination
1101	0	0	0	0	0	N	0	0
1102	0	0	0	0	0	N	0	0
1103	0	0	0	0	0	N	0	0
1104	0	0	0	0	0	N	0	0
1105	0	0	0	0	0	N	0	0
1106	0	0	0	0	0	N	0	0
1107	0	0	0	0	0	N	0	0
1108	0	0	0	0	0	N	0	0
1109	0	0	0	0	0	N	0	0
1110	0	0	0	0	0	N	0	0
1111	0	0	0	0	0	N	0	0
n	11	11	11	11	11	11	11	11

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : F0 gestation

Generation : F0 Sex : Female Day : 1 Dose : EES 0 mg/kg Species : Rat

Animal No.	Rearing	Defecation count
1101	7	0
1102	6	0
1103	9	0
1104	5	0
1105	5	0
1106	4	0
1107	1	0
1108	9	0
1109	8	0
1110	6	0
1111	2	0
n	11	11
Mean	6	0
S.D.	3	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : F0 gestation

Generation : F0 Sex : Female Day : 1 Dose : EES 5 mg/kg Species : Rat

Animal No.	Arousal	Convulsion	Abnormal behavior	Stereotypy	Gait	Posture	Grooming	Urination
2101	0	0	0	0	0	N	0	0
2102	0	0	0	0	0	N	0	0
2103	0	0	0	0	0	N	0	0
2104	0	0	0	0	0	N	0	0
2105	0	0	0	0	0	N	0	0
2106	0	0	0	0	0	N	0	0
2107	0	0	0	0	0	N	0	0
2108	0	0	0	0	0	N	0	0
2109	0	0	0	0	0	N	0	0
2110	0	0	0	0	0	N	0	0
2111	0	0	0	0	0	N	0	0
2112	0	0	0	0	0	N	0	0
n	12	12	12	12	12	12	12	12

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Open field observation Period : F0 gestation
Generation : F0 Sex : Female Day : 1 Dose : EES 5 mg/kg Species : Rat

Animal No.	Rearing	Defecation count
2101	3	0
2102	14	0
2103	4	0
2104	5	0
2105	7	0
2106	2	0
2107	4	0
2108	6	0
2109	5	0
2110	8	0
2111	8	0
2112	4	0
n	12	12
Mean	6	0
S.D.	3	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : F0 gestation

Generation : F0 Sex : Female Day : 1 Dose : EES 15 mg/kg Species : Rat

Animal No.	Arousal	Convulsion	Abnormal behavior	Stereotypy	Gait	Posture	Grooming	Urination
3101	0	0	0	0	0	N	0	0
3103	0	0	0	0	0	N	0	0
3104	0	0	0	0	0	N	0	0
3105	0	0	0	0	0	N	0	0
3106	0	0	0	0	0	N	0	0
3107	0	0	0	0	0	N	0	0
3108	0	0	0	0	0	N	0	0
3109	0	0	0	0	0	N	0	0
3110	0	0	0	0	0	N	0	0
3111	0	0	0	0	0	N	0	0
3112	0	0	0	0	0	N	0	0
n	11	11	11	11	11	11	11	11

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : F0 gestation

Generation : F0 Sex : Female Day : 1 Dose : EES 15 mg/kg Species : Rat

Animal No.	Rearing	Defecation count
3101	5	0
3103	6	0
3104	3	0
3105	6	0
3106	6	0
3107	5	0
3108	4	0
3109	8	0
3110	7	0
3111	4	0
3112	5	0
n	11	11
Mean	5	0
S.D.	1	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : F0 gestation

Generation : F0 Sex : Female Day : 1 Dose : EES 50 mg/kg Species : Rat

Animal No.	Arousal	Convulsion	Abnormal behavior	Stereotypy	Gait	Posture	Grooming	Urination
4101	0	0	0	0	0	N	0	0
4103	0	0	0	0	0	N	0	0
4104	0	0	0	0	0	N	0	0
4105	0	0	0	0	0	N	0	0
4106	0	0	0	0	0	N	0	0
4107	0	0	0	0	0	N	0	0
4108	0	0	0	0	0	N	0	0
4109	0	0	0	0	0	N	0	0
4110	0	0	0	0	0	N	0	0
4111	0	0	0	0	0	N	0	0
4112	0	0	0	0	0	N	0	0
n	11	11	11	11	11	11	11	11

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : F0 gestation

Generation : F0 Sex : Female Day : 1 Dose : EES 50 mg/kg Species : Rat

Animal No.	Rearing	Defecation count
4101	5	0
4103	6	0
4104	8	0
4105	5	0
4106	6	0
4107	1	0
4108	6	0
4109	4	0
4110	12	0
4111	6	0
4112	9	0
n	11	11
Mean	6	0
S.D.	3	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : F0 gestation

Generation : F0 Sex : Female Day : 7 Dose : EES 0 mg/kg Species : Rat

Animal No.	Arousal	Convulsion	Abnormal behavior	Stereotypy	Gait	Posture	Grooming	Urination
1101	0	0	0	0	0	N	0	0
1102	0	0	0	0	0	N	0	0
1103	0	0	0	0	0	N	0	0
1104	0	0	0	0	0	N	0	0
1105	0	0	0	0	0	N	0	0
1106	0	0	0	0	0	N	0	0
1107	0	0	0	0	0	N	0	0
1108	0	0	0	0	0	N	0	0
1109	0	0	0	0	0	N	0	0
1110	0	0	0	0	0	N	0	0
1111	0	0	0	0	0	N	0	0
n	11	11	11	11	11	11	11	11

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : F0 gestation

Generation : F0 Sex : Female Day : 7 Dose : EES 0 mg/kg Species : Rat

Animal No.	Rearing	Defecation count
1101	6	0
1102	8	0
1103	7	0
1104	4	0
1105	4	0
1106	5	0
1107	1	0
1108	6	0
1109	8	0
1110	13	0
1111	6	0
n	11	11
Mean	6	0
S.D.	3	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation
Generation : F0 Sex : Female Day : 7 Period : F0 gestation
Dose : EES 5 mg/kg Species : Rat

Animal No.	Arousal	Convulsion	Abnormal behavior	Stereotypy	Gait	Posture	Grooming	Urination
2101	0	0	0	0	0	N	0	0
2102	0	0	0	0	0	N	0	0
2103	0	0	0	0	0	N	0	0
2104	0	0	0	0	0	N	0	0
2105	0	0	0	0	0	N	0	0
2106	0	0	0	0	0	N	0	1
2107	0	0	0	0	0	N	0	0
2108	0	0	0	0	0	N	0	0
2109	0	0	0	0	0	N	0	0
2110	0	0	0	0	0	N	0	0
2111	0	0	0	0	0	N	0	0
2112	0	0	0	0	0	N	0	0
n	12	12	12	12	12	12	12	12

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Open field observation Period : F0 gestation
Generation : F0 Sex : Female Day : 7 Dose : EES 5 mg/kg Species : Rat

Animal No.	Rearing	Defecation count
2101	7	0
2102	5	0
2103	6	0
2104	5	0
2105	12	0
2106	4	0
2107	10	0
2108	7	0
2109	3	0
2110	7	0
2111	5	0
2112	7	0
n	12	12
Mean	7	0
S.D.	3	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : F0 gestation

Generation : F0 Sex : Female Day : 7 Dose : EES 15 mg/kg Species : Rat

Animal No.	Arousal	Convulsion	Abnormal behavior	Stereotypy	Gait	Posture	Grooming	Urination
3101	0	0	0	0	0	N	0	0
3103	0	0	0	0	0	N	0	0
3104	0	0	0	0	0	N	0	0
3105	0	0	0	0	0	N	0	0
3106	0	0	0	0	0	N	0	0
3107	0	0	0	0	0	N	0	0
3108	0	0	0	0	0	N	0	0
3109	0	0	0	0	0	N	0	0
3110	0	0	0	0	0	N	0	0
3111	0	0	0	0	0	N	0	0
3112	0	0	0	0	0	N	0	0
n	11	11	11	11	11	11	11	11

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : F0 gestation

Generation : F0 Sex : Female Day : 7 Dose : EES 15 mg/kg Species : Rat

Animal No.	Rearing	Defecation count
3101	3	0
3103	6	0
3104	6	0
3105	6	0
3106	4	0
3107	8	0
3108	3	0
3109	9	0
3110	8	0
3111	7	0
3112	5	0
n	11	11
Mean	6	0
S.D.	2	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : F0 gestation

Generation : F0 Sex : Female Day : 7 Dose : EES 50 mg/kg Species : Rat

Animal No.	Arousal	Convulsion	Abnormal behavior	Stereotypy	Gait	Posture	Grooming	Urination
4101	0	0	0	0	0	N	0	0
4103	0	0	0	0	0	N	0	0
4104	0	0	0	0	0	N	0	0
4105	0	0	0	0	0	N	0	0
4106	0	0	0	0	0	N	0	0
4107	0	0	0	0	0	N	0	0
4108	0	0	0	0	0	N	0	0
4109	0	0	0	0	0	N	0	0
4110	0	0	0	0	0	N	0	0
4111	0	0	0	0	0	N	0	0
4112	0	0	0	0	0	N	0	0
n	11	11	11	11	11	11	11	11

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Open field observation Period : F0 gestation

Generation : F0 Sex : Female Day : 7 Dose : EES 50 mg/kg Species : Rat

Animal No.	Rearing	Defecation count
4101	2	0
4103	8	0
4104	5	0
4105	5	0
4106	6	0
4107	1	0
4108	5	0
4109	2	0
4110	9	0
4111	7	0
4112	7	0
n	11	11
Mean	5	0
S.D.	3	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : F0 gestation

Generation : F0 Sex : Female Day : 14 Dose : EES 0 mg/kg Species : Rat

Animal No.	Arousal	Convulsion	Abnormal behavior	Stereotypy	Gait	Posture	Grooming	Urination
1101	0	0	0	0	0	N	0	0
1102	0	0	0	0	0	N	0	0
1103	0	0	0	0	0	N	0	0
1104	0	0	0	0	0	N	0	0
1105	0	0	0	0	0	N	0	0
1106	0	0	0	0	0	N	0	0
1107	0	0	0	0	0	N	0	0
1108	0	0	0	0	0	N	0	0
1109	0	0	0	0	0	N	0	0
1110	0	0	0	0	0	N	0	0
1111	0	0	0	0	0	N	0	0
n	11	11	11	11	11	11	11	11

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : F0 gestation

Generation : F0 Sex : Female Day : 14 Dose : EES 0 mg/kg Species : Rat

Animal No.	Rearing	Defecation count
1101	4	0
1102	5	0
1103	8	0
1104	3	0
1105	7	0
1106	5	0
1107	4	0
1108	6	0
1109	5	0
1110	8	0
1111	4	0
n	11	11
Mean	5	0
S.D.	2	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation
Generation : F0 Sex : Female Day : 14 Period : F0 gestation
Dose : EES 5 mg/kg Species : Rat

Animal No.	Arousal	Convulsion	Abnormal behavior	Stereotypy	Gait	Posture	Grooming	Urination
2101	0	0	0	0	0	N	0	0
2102	0	0	0	0	0	N	0	0
2103	0	0	0	0	0	N	0	0
2104	0	0	0	0	0	N	0	0
2105	0	0	0	0	0	N	0	0
2106	0	0	0	0	0	N	0	0
2107	0	0	0	0	0	N	0	0
2108	0	0	0	0	0	N	0	0
2109	0	0	0	0	0	N	0	0
2110	0	0	0	0	0	N	0	0
2111	0	0	0	0	0	N	0	0
2112	0	0	0	0	0	N	0	0
n	12	12	12	12	12	12	12	12

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Open field observation Period : F0 gestation
Generation : F0 Sex : Female Day : 14 Dose : EES 5 mg/kg Species : Rat

Animal No.	Rearing	Defecation count
2101	4	0
2102	6	0
2103	5	0
2104	6	0
2105	8	0
2106	3	0
2107	7	0
2108	6	0
2109	0	0
2110	6	0
2111	4	0
2112	5	0
n	12	12
Mean	5	0
S.D.	2	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : F0 gestation

Generation : F0 Sex : Female Day : 14 Dose : EES 15 mg/kg Species : Rat

Animal No.	Arousal	Convulsion	Abnormal behavior	Stereotypy	Gait	Posture	Grooming	Urination
3101	0	0	0	0	0	N	0	0
3103	0	0	0	0	0	N	0	0
3104	0	0	0	0	0	N	0	0
3105	0	0	0	0	0	N	0	0
3106	0	0	0	0	0	N	0	0
3107	0	0	0	0	0	N	0	0
3108	0	0	0	0	0	N	0	0
3109	0	0	0	0	0	N	0	0
3110	0	0	0	0	0	N	0	0
3111	0	0	0	0	0	N	0	0
3112	0	0	0	0	0	N	0	0
n	11	11	11	11	11	11	11	11

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : F0 gestation

Generation : F0 Sex : Female Day : 14 Dose : EES 15 mg/kg Species : Rat

Animal No.	Rearing	Defecation count
3101	3	0
3103	4	0
3104	5	0
3105	7	0
3106	6	0
3107	3	0
3108	2	0
3109	8	0
3110	5	0
3111	6	0
3112	6	0
n	11	11
Mean	5	0
S.D.	2	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : F0 gestation

Generation : F0 Sex : Female Day : 14 Dose : EES 50 mg/kg Species : Rat

Animal No.	Arousal	Convulsion	Abnormal behavior	Stereotypy	Gait	Posture	Grooming	Urination
4101	0	0	0	0	0	N	0	0
4103	0	0	0	0	0	N	0	0
4104	0	0	0	0	0	N	0	0
4105	0	0	0	0	0	N	0	0
4106	0	0	0	0	0	N	0	0
4107	0	0	0	0	0	N	0	0
4108	0	0	0	0	0	N	0	0
4109	0	0	0	0	0	N	0	0
4110	0	0	0	0	0	N	0	0
4111	0	0	0	0	0	N	0	0
4112	0	0	0	0	0	N	0	0
n	11	11	11	11	11	11	11	11

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Open field observation Period : F0 gestation

Generation : F0 Sex : Female Day : 14 Dose : EES 50 mg/kg Species : Rat

Animal No.	Rearing	Defecation count
4101	4	0
4103	7	0
4104	5	0
4105	7	0
4106	5	0
4107	2	0
4108	3	0
4109	2	0
4110	8	0
4111	4	0
4112	4	0
n	11	11
Mean	5	0
S.D.	2	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Study No. : R-1244

Open field observation

Period : F0 gestation

Generation : F0 Sex : Female Day : 20 Dose : EES 0 mg/kg Species : Rat

Animal No.	Arousal	Convulsion	Abnormal behavior	Stereotypy	Gait	Posture	Grooming	Urination
1101	0	0	0	0	0	N	0	0
1102	0	0	0	0	0	N	0	0
1103	0	0	0	0	0	N	0	0
1104	0	0	0	0	0	N	0	0
1105	0	0	0	0	0	N	0	0
1106	0	0	0	0	0	N	0	0
1107	0	0	0	0	0	N	0	0
1108	0	0	0	0	0	N	0	0
1109	0	0	0	0	0	N	0	0
1110	0	0	0	0	0	N	0	0
1111	0	0	0	0	0	N	0	0
n	11	11	11	11	11	11	11	11

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : F0 gestation

Generation : F0 Sex : Female Day : 20 Dose : EES 0 mg/kg Species : Rat

Animal No.	Rearing	Defecation count
1101	4	0
1102	6	0
1103	5	0
1104	4	0
1105	5	0
1106	2	0
1107	5	0
1108	6	0
1109	3	0
1110	5	0
1111	4	0
n	11	11
Mean	4	0
S.D.	1	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : F0 gestation

Generation : F0 Sex : Female Day : 20 Dose : EES 5 mg/kg Species : Rat

Animal No.	Arousal	Convulsion	Abnormal behavior	Stereotypy	Gait	Posture	Grooming	Urination
2101	0	0	0	0	0	N	0	0
2102	0	0	0	0	0	N	0	0
2103	0	0	0	0	0	N	0	0
2104	0	0	0	0	0	N	0	0
2105	0	0	0	0	0	N	0	0
2106	0	0	0	0	0	N	0	0
2107	0	0	0	0	0	N	0	0
2108	0	0	0	0	0	N	0	0
2109	0	0	0	0	0	N	0	0
2110	0	0	0	0	0	N	0	0
2111	0	0	0	0	0	N	0	0
2112	0	0	0	0	0	N	0	0
n	12	12	12	12	12	12	12	12

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Open field observation Period : F0 gestation

Generation : F0 Sex : Female Day : 20 Dose : EES 5 mg/kg Species : Rat

Animal No.	Rearing	Defecation count
2101	3	0
2102	3	0
2103	4	0
2104	7	0
2105	5	0
2106	5	0
2107	5	0
2108	5	0
2109	0	0
2110	4	0
2111	3	0
2112	3	0
n	12	12
Mean	4	0
S.D.	2	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Study No. : R-1244

Open field observation

Period : F0 gestation

Generation : F0 Sex : Female Day : 20 Dose : EES 15 mg/kg Species : Rat

Animal No.	Arousal	Convulsion	Abnormal behavior	Stereotypy	Gait	Posture	Grooming	Urination
3101	0	0	0	0	0	N	0	0
3103	0	0	0	0	0	N	0	0
3104	0	0	0	0	0	N	0	0
3105	0	0	0	0	0	N	0	0
3106	0	0	0	0	0	N	0	0
3107	0	0	0	0	0	N	0	0
3108	0	0	0	0	0	N	0	0
3109	0	0	0	0	0	N	0	0
3110	0	0	0	0	0	N	0	0
3111	0	0	0	0	0	N	0	0
3112	0	0	0	0	0	N	0	0
n	11	11	11	11	11	11	11	11

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : F0 gestation

Generation : F0 Sex : Female Day : 20 Dose : EES 15 mg/kg Species : Rat

Animal No.	Rearing	Defecation count
3101	3	0
3103	3	0
3104	1	0
3105	5	0
3106	3	0
3107	4	0
3108	1	0
3109	6	0
3110	4	0
3111	4	0
3112	3	0
n	11	11
Mean	3	0
S.D.	2	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Study No. : R-1244

Open field observation

Period : F0 gestation

Generation : F0 Sex : Female Day : 20 Dose : EES 50 mg/kg Species : Rat

Animal No.	Arousal	Convulsion	Abnormal behavior	Stereotypy	Gait	Posture	Grooming	Urination
4101	0	0	0	0	0	N	0	0
4103	0	0	0	0	0	N	0	0
4104	0	0	0	0	0	N	0	0
4105	0	0	0	0	0	N	0	0
4106	0	0	0	0	0	N	0	0
4107	0	0	0	0	0	N	0	0
4108	0	0	0	0	0	N	0	0
4109	0	0	0	0	0	N	0	0
4110	0	0	0	0	0	N	0	0
4111	0	0	0	0	0	N	0	0
4112	0	0	0	0	0	N	0	0
n	11	11	11	11	11	11	11	11

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : F0 gestation

Generation : F0 Sex : Female Day : 20 Dose : EES 50 mg/kg Species : Rat

Animal No.	Rearing	Defecation count
4101	3	0
4103	5	0
4104	6	0
4105	4	0
4106	4	0
4107	0	0
4108	2	0
4109	3	0
4110	3	0
4111	3	0
4112	4	0
n	11	11
Mean	3	0
S.D.	2	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : F0 lactation

Generation : F0 Sex : Female Day : 6 Dose : EES 0 mg/kg Species : Rat

Animal No.	Arousal	Convulsion	Abnormal behavior	Stereotypy	Gait	Posture	Grooming	Urination
1101	0	0	0	0	0	N	0	0
1102	0	0	0	0	0	N	0	0
1103	0	0	0	0	0	N	0	0
1104	0	0	0	0	0	N	0	0
1105	0	0	0	0	0	N	0	0
1106	0	0	0	0	0	N	0	0
1107	0	0	0	0	0	N	0	0
1108	0	0	0	0	0	N	0	0
1109	0	0	0	0	0	N	0	0
1110	0	0	0	0	0	N	0	0
1111	0	0	0	0	0	N	0	0
n	11	11	11	11	11	11	11	11

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : F0 lactation

Generation : F0 Sex : Female Day : 6 Dose : EES 0 mg/kg Species : Rat

Animal No.	Rearing	Defecation count
1101	6	0
1102	4	0
1103	6	0
1104	5	0
1105	3	0
1106	4	0
1107	4	0
1108	7	0
1109	5	0
1110	7	0
1111	5	0
n	11	11
Mean	5	0
S.D.	1	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : F0 lactation

Generation : F0 Sex : Female Day : 6 Dose : EES 5 mg/kg Species : Rat

Animal No.	Arousal	Convulsion	Abnormal behavior	Stereotypy	Gait	Posture	Grooming	Urination
2101	0	0	0	0	0	N	0	0
2102	0	0	0	0	0	N	0	0
2103	0	0	0	0	0	N	0	0
2104	0	0	0	0	0	N	0	0
2105	0	0	0	0	0	N	0	0
2106	0	0	0	0	0	N	0	0
2107	0	0	0	0	0	N	0	0
2108	0	0	0	0	0	N	0	0
2109	0	0	0	0	0	N	0	0
2110	0	0	0	0	0	N	0	0
2111	0	0	0	0	0	N	0	0
2112	0	0	0	0	0	N	0	0
n	12	12	12	12	12	12	12	12

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : F0 lactation

Generation : F0 Sex : Female Day : 6 Dose : EES 5 mg/kg Species : Rat

Animal No.	Rearing	Defecation count
2101	7	0
2102	5	0
2103	2	0
2104	5	0
2105	1	0
2106	5	0
2107	3	0
2108	7	0
2109	3	0
2110	4	0
2111	0	0
2112	5	0
n	12	12
Mean	4	0
S.D.	2	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : F0 lactation

Generation : F0 Sex : Female Day : 6 Dose : EES 15 mg/kg Species : Rat

Animal No.	Arousal	Convulsion	Abnormal behavior	Stereotypy	Gait	Posture	Grooming	Urination
3101	0	0	0	0	0	N	0	0
3103	0	0	0	0	0	N	0	0
3104	0	0	0	0	0	N	0	0
3106	0	0	0	0	0	N	0	0
3107	0	0	0	0	0	N	0	0
3108	0	0	0	0	0	N	0	0
3109	0	0	0	0	0	N	0	0
3110	0	0	0	0	0	N	0	0
3111	0	0	0	0	0	N	0	0
3112	0	0	0	0	0	N	0	0
n	10	10	10	10	10	10	10	10

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : F0 lactation

Generation : F0 Sex : Female Day : 6 Dose : EES 15 mg/kg Species : Rat

Animal No.	Rearing	Defecation count
3101	6	0
3103	4	0
3104	8	0
3106	4	0
3107	4	0
3108	3	0
3109	6	0
3110	7	0
3111	2	0
3112	4	0
n	10	10
Mean	5	0
S.D.	2	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : F0 lactation

Generation : F0 Sex : Female Day : 6 Dose : EES 50 mg/kg Species : Rat

Animal No.	Arousal	Convulsion	Abnormal behavior	Stereotypy	Gait	Posture	Grooming	Urination
4101	0	0	0	0	0	N	0	0
4103	0	0	0	0	0	N	0	0
4104	0	0	0	0	0	N	0	0
4105	0	0	0	0	0	N	0	0
4106	0	0	0	0	0	N	0	0
4107	0	0	0	0	0	N	0	0
4108	0	0	0	0	0	N	0	0
4109	0	0	0	0	0	N	0	0
4110	0	0	0	0	0	N	0	0
4111	0	0	0	0	0	N	0	0
4112	0	0	0	0	0	N	0	0
n	11	11	11	11	11	11	11	11

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : F0 lactation

Generation : F0 Sex : Female Day : 6 Dose : EES 50 mg/kg Species : Rat

Animal No.	Rearing	Defecation count
4101	11	0
4103	7	0
4104	5	0
4105	7	0
4106	7	0
4107	4	0
4108	3	0
4109	4	0
4110	9	0
4111	8	0
4112	6	0
n	11	11
Mean	6	0
S.D.	2	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : F0 lactation

Generation : F0 Sex : Female Day : 13 Dose : EES 0 mg/kg Species : Rat

Animal No.	Arousal	Convulsion	Abnormal behavior	Stereotypy	Gait	Posture	Grooming	Urination
1101	0	0	0	0	0	N	0	0
1102	0	0	0	0	0	N	0	0
1103	0	0	0	0	0	N	0	0
1104	0	0	0	0	0	N	0	0
1105	0	0	0	0	0	N	0	0
1106	0	0	0	0	0	N	0	0
1107	0	0	0	0	0	N	0	0
1108	0	0	0	0	0	N	0	0
1109	0	0	0	0	0	N	0	0
1110	0	0	0	0	0	N	0	0
1111	0	0	0	0	0	N	0	0
n	11	11	11	11	11	11	11	11

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Open field observation Period : F0 lactation
Generation : F0 Sex : Female Day : 13 Dose : EES 0 mg/kg Species : Rat

Animal No.	Rearing	Defecation count
1101	6	0
1102	5	0
1103	9	0
1104	5	0
1105	5	0
1106	3	0
1107	6	0
1108	5	0
1109	6	0
1110	9	0
1111	4	0
n	11	11
Mean	6	0
S.D.	2	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : F0 lactation

Generation : F0 Sex : Female Day : 13 Dose : EES 5 mg/kg Species : Rat

Animal No.	Arousal	Convulsion	Abnormal behavior	Stereotypy	Gait	Posture	Grooming	Urination
2101	0	0	0	0	0	N	0	0
2102	0	0	0	0	0	N	0	0
2103	0	0	0	0	0	N	0	0
2104	0	0	0	0	0	N	0	0
2105	0	0	0	0	0	N	0	0
2106	0	0	0	0	0	N	0	0
2107	0	0	0	0	0	N	0	0
2108	0	0	0	0	0	N	0	0
2109	0	0	0	0	0	N	0	0
2110	0	0	0	0	0	N	0	0
2111	0	0	0	0	0	N	0	0
2112	0	0	0	0	0	N	0	0
n	12	12	12	12	12	12	12	12

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : F0 lactation

Generation : F0 Sex : Female Day : 13 Dose : EES 5 mg/kg Species : Rat

Animal No.	Rearing	Defecation count
2101	6	0
2102	6	0
2103	3	0
2104	5	0
2105	8	0
2106	11	0
2107	4	0
2108	5	0
2109	8	0
2110	4	0
2111	4	0
2112	8	0
n	12	12
Mean	6	0
S.D.	2	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : F0 lactation

Generation : F0 Sex : Female Day : 13 Dose : EES 15 mg/kg Species : Rat

Animal No.	Arousal	Convulsion	Abnormal behavior	Stereotypy	Gait	Posture	Grooming	Urination
3101	0	0	0	0	0	N	0	0
3103	0	0	0	0	0	N	0	0
3104	0	0	0	0	0	N	0	0
3106	0	0	0	0	0	N	0	0
3107	0	0	0	0	0	N	0	0
3108	0	0	0	0	0	N	0	0
3109	0	0	0	0	0	N	0	0
3110	0	0	0	0	0	N	0	0
3111	0	0	0	0	0	N	0	0
3112	0	0	0	0	0	N	0	0
n	10	10	10	10	10	10	10	10

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : F0 lactation

Generation : F0 Sex : Female Day : 13 Dose : EES 15 mg/kg Species : Rat

Animal No.	Rearing	Defecation count
3101	6	0
3103	3	0
3104	7	0
3106	10	0
3107	7	0
3108	4	0
3109	8	0
3110	7	0
3111	5	0
3112	6	0
n	10	10
Mean	6	0
S.D.	2	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : F0 lactation

Generation : F0 Sex : Female Day : 13 Dose : EES 50 mg/kg Species : Rat

Animal No.	Arousal	Convulsion	Abnormal behavior	Stereotypy	Gait	Posture	Grooming	Urination
4101	0	0	0	0	0	N	0	0
4103	0	0	0	0	0	N	0	0
4104	0	0	0	0	0	N	0	0
4105	0	0	0	0	0	N	0	0
4106	0	0	0	0	0	N	0	0
4107	0	0	0	0	0	N	0	0
4108	0	0	0	0	0	N	0	0
4109	0	0	0	0	0	N	0	0
4110	0	0	0	0	0	N	0	0
4111	0	0	0	0	0	N	0	0
4112	0	0	0	0	0	N	0	0
n	11	11	11	11	11	11	11	11

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : F0 lactation

Generation : F0 Sex : Female Day : 13 Dose : EES 50 mg/kg Species : Rat

Animal No.	Rearing	Defecation count
4101	5	0
4103	8	0
4104	10	0
4105	5	0
4106	5	0
4107	2	0
4108	7	0
4109	5	0
4110	12	0
4111	5	0
4112	6	0
n	11	11
Mean	6	0
S.D.	3	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : Administration (non-mating group)

Generation : F0 Sex : Female Week : 1 Dose : EES 0 mg/kg Species : Rat

Animal No.	Arousal	Convulsion	Abnormal behavior	Stereotypy	Gait	Posture	Grooming	Urination
5101	0	0	0	0	0	N	0	0
5102	0	0	0	0	0	N	0	0
5103	0	0	0	0	0	N	0	0
5104	0	0	0	0	0	N	0	0
5105	0	0	0	0	0	N	0	0
5106	0	0	0	0	0	N	0	0
5107	0	0	0	0	0	N	0	0
5108	0	0	0	0	0	N	0	0
5109	0	0	0	0	0	N	0	0
5110	0	0	0	0	0	N	0	0
n	10	10	10	10	10	10	10	10

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Study No. : R-1244

Open field observation

Period : Administration (non-mating group)

Generation : F0 Sex : Female Week : 1 Dose : EES 0 mg/kg Species : Rat

Animal No.	Rearing	Defecation count
5101	3	0
5102	4	0
5103	7	0
5104	3	0
5105	8	0
5106	5	0
5107	5	0
5108	6	0
5109	5	0
5110	8	0
n	10	10
Mean	5	0
S.D.	2	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : Administration (non-mating group)

Generation : F0 Sex : Female Week : 1 Dose : EES 50 mg/kg Species : Rat

Animal No.	Arousal	Convulsion	Abnormal behavior	Stereotypy	Gait	Posture	Grooming	Urination
6101	0	0	0	0	0	N	0	0
6102	0	0	0	0	0	N	0	0
6103	0	0	0	0	0	N	0	0
6104	0	0	0	0	0	N	0	0
6105	0	0	0	0	0	N	0	0
6106	0	0	0	0	0	N	0	0
6107	0	0	0	0	0	N	0	0
6108	0	0	0	0	0	N	0	0
6109	0	0	0	0	0	N	0	0
6110	0	0	0	0	0	N	0	0
n	10	10	10	10	10	10	10	10

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Study No. : R-1244

Open field observation

Period : Administration (non-mating group)

Generation : F0 Sex : Female Week : 1 Dose : EES 50 mg/kg Species : Rat

Animal No.	Rearing	Defecation count
6101	7	0
6102	5	0
6103	7	0
6104	6	0
6105	10	0
6106	7	0
6107	4	0
6108	3	0
6109	8	0
6110	3	0
n	10	10
Mean	6	0
S.D.	2	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : Administration (non-mating group)

Generation : F0 Sex : Female Week : 2 Dose : EES 0 mg/kg Species : Rat

Animal No.	Arousal	Convulsion	Abnormal behavior	Stereotypy	Gait	Posture	Grooming	Urination
5101	0	0	0	0	0	N	0	0
5102	0	0	0	0	0	N	0	0
5103	0	0	0	0	0	N	0	0
5104	0	0	0	0	0	N	0	0
5105	0	0	0	0	0	N	0	0
5106	0	0	0	0	0	N	0	0
5107	0	0	0	0	0	N	0	0
5108	0	0	0	0	0	N	0	0
5109	0	0	0	0	0	N	0	0
5110	0	0	0	0	0	N	0	0
n	10	10	10	10	10	10	10	10

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Open field observation Period : Administration (non-mating group)
Generation : F0 Sex : Female Week : 2 Dose : EES 0 mg/kg Species : Rat

Animal No.	Rearing	Defecation count
5101	4	0
5102	0	0
5103	9	0
5104	3	0
5105	9	0
5106	5	0
5107	6	0
5108	11	0
5109	9	0
5110	6	0
n	10	10
Mean	6	0
S.D.	3	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : Administration (non-mating group)

Generation : F0 Sex : Female Week : 2 Dose : EES 50 mg/kg Species : Rat

Animal No.	Arousal	Convulsion	Abnormal behavior	Stereotypy	Gait	Posture	Grooming	Urination
6101	0	0	0	0	0	N	0	0
6102	0	0	0	0	0	N	0	0
6103	0	0	0	0	0	N	0	0
6104	0	0	0	0	0	N	0	0
6105	0	0	0	0	0	N	0	0
6106	0	0	0	0	0	N	0	0
6107	0	0	0	0	0	N	0	0
6108	0	0	0	0	0	N	0	0
6109	0	0	0	0	0	N	0	0
6110	0	0	0	0	0	N	0	0
n	10	10	10	10	10	10	10	10

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Study No. : R-1244

Open field observation

Period : Administration (non-mating group)

Generation : F0 Sex : Female Week : 2 Dose : EES 50 mg/kg Species : Rat

Animal No.	Rearing	Defecation count
6101	6	0
6102	2	0
6103	5	0
6104	6	0
6105	10	0
6106	5	0
6107	4	0
6108	6	0
6109	9	0
6110	5	0
n	10	10
Mean	6	0
S.D.	2	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : Administration (non-mating group)

Generation : F0 Sex : Female Week : 3 Dose : EES 0 mg/kg Species : Rat

Animal No.	Arousal	Convulsion	Abnormal behavior	Stereotypy	Gait	Posture	Grooming	Urination
5101	0	0	0	0	0	N	0	0
5102	0	0	0	0	0	N	0	0
5103	0	0	0	0	0	N	0	0
5104	0	0	0	0	0	N	0	0
5105	0	0	0	0	0	N	0	0
5106	0	0	0	0	0	N	0	0
5107	0	0	0	0	0	N	0	0
5108	0	0	0	0	0	N	0	0
5109	0	0	0	0	0	N	0	0
5110	0	0	0	0	0	N	0	0
n	10	10	10	10	10	10	10	10

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Study No. : R-1244

Open field observation

Period : Administration (non-mating group)

Generation : F0 Sex : Female Week : 3 Dose : EES 0 mg/kg Species : Rat

Animal No.	Rearing	Defecation count
5101	7	0
5102	3	0
5103	11	0
5104	2	0
5105	10	0
5106	6	0
5107	5	0
5108	6	0
5109	6	0
5110	5	0
n	10	10
Mean	6	0
S.D.	3	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : Administration (non-mating group)

Generation : F0 Sex : Female Week : 3 Dose : EES 50 mg/kg Species : Rat

Animal No.	Arousal	Convulsion	Abnormal behavior	Stereotypy	Gait	Posture	Grooming	Urination
6101	0	0	0	0	0	N	0	0
6102	0	0	0	0	0	N	0	0
6103	0	0	0	0	0	N	0	0
6104	0	0	0	0	0	N	0	0
6105	0	0	0	0	0	N	0	0
6106	0	0	0	0	0	N	0	0
6107	0	0	0	0	0	N	0	0
6108	0	0	0	0	0	N	0	0
6109	0	0	0	0	0	N	0	0
6110	0	0	0	0	0	N	0	0
n	10	10	10	10	10	10	10	10

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Study No. : R-1244

Open field observation

Period : Administration (non-mating group)

Generation : F0 Sex : Female Week : 3 Dose : EES 50 mg/kg Species : Rat

Animal No.	Rearing	Defecation count
6101	7	0
6102	4	0
6103	8	0
6104	6	0
6105	7	0
6106	7	0
6107	6	0
6108	5	0
6109	9	0
6110	7	0
n	10	10
Mean	7	0
S.D.	1	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : Administration (non-mating group)

Generation : F0 Sex : Female Week : 4 Dose : EES 0 mg/kg Species : Rat

Animal No.	Arousal	Convulsion	Abnormal behavior	Stereotypy	Gait	Posture	Grooming	Urination
5101	0	0	0	0	0	N	0	0
5102	0	0	0	0	0	N	0	0
5103	0	0	0	0	0	N	0	0
5104	0	0	0	0	0	N	0	0
5105	0	0	0	0	0	N	0	0
5106	0	0	0	0	0	N	0	0
5107	0	0	0	0	0	N	0	0
5108	0	0	0	0	0	N	0	0
5109	0	0	0	0	0	N	0	0
5110	0	0	0	0	0	N	0	0
n	10	10	10	10	10	10	10	10

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : Administration (non-mating group)

Generation : F0 Sex : Female Week : 4 Dose : EES 0 mg/kg Species : Rat

Animal No.	Rearing	Defecation count
5101	5	0
5102	3	0
5103	5	0
5104	5	0
5105	10	0
5106	8	0
5107	6	0
5108	10	0
5109	8	0
5110	10	0
n	10	10
Mean	7	0
S.D.	3	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : Administration (non-mating group)

Generation : F0 Sex : Female Week : 4 Dose : EES 50 mg/kg Species : Rat

Animal No.	Arousal	Convulsion	Abnormal behavior	Stereotypy	Gait	Posture	Grooming	Urination
6101	0	0	0	0	0	N	0	0
6102	0	0	0	0	0	N	0	0
6103	0	0	0	0	0	N	0	0
6104	0	0	0	0	0	N	0	0
6105	0	0	0	0	0	N	0	0
6106	0	0	0	0	0	N	0	0
6107	0	0	0	0	0	N	0	0
6108	0	0	0	0	0	N	0	0
6109	0	0	0	0	0	N	0	0
6110	0	0	0	0	0	N	0	0
n	10	10	10	10	10	10	10	10

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : Administration (non-mating group)

Generation : F0 Sex : Female Week : 4 Dose : EES 50 mg/kg Species : Rat

Animal No.	Rearing	Defecation count
6101	4	0
6102	4	0
6103	7	0
6104	5	0
6105	8	0
6106	8	0
6107	6	0
6108	11	0
6109	12	0
6110	7	0
n	10	10
Mean	7	0
S.D.	3	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : Administration (non-mating group)

Generation : F0 Sex : Female Week : 5 Dose : EES 0 mg/kg Species : Rat

Animal No.	Arousal	Convulsion	Abnormal behavior	Stereotypy	Gait	Posture	Grooming	Urination
5101	0	0	0	0	0	N	0	0
5102	0	0	0	0	0	N	0	0
5103	0	0	0	0	0	N	0	0
5104	0	0	0	0	0	N	0	0
5105	0	0	0	0	0	N	0	0
5106	0	0	0	0	0	N	0	0
5107	0	0	0	0	0	N	0	0
5108	0	0	0	0	0	N	0	0
5109	0	0	0	0	0	N	0	0
5110	0	0	0	0	0	N	0	0
n	10	10	10	10	10	10	10	10

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Study No. : R-1244

Open field observation

Period : Administration (non-mating group)

Generation : F0 Sex : Female Week : 5 Dose : EES 0 mg/kg Species : Rat

Animal No.	Rearing	Defecation count
5101	9	0
5102	3	0
5103	5	0
5104	7	0
5105	6	0
5106	8	0
5107	6	0
5108	7	0
5109	3	0
5110	5	0
n	10	10
Mean	6	0
S.D.	2	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : Administration (non-mating group)

Generation : F0 Sex : Female Week : 5 Dose : EES 50 mg/kg Species : Rat

Animal No.	Arousal	Convulsion	Abnormal behavior	Stereotypy	Gait	Posture	Grooming	Urination
6101	0	0	0	0	0	N	0	0
6102	0	0	0	0	0	N	0	0
6103	0	0	0	0	0	N	0	0
6104	0	0	0	0	0	N	0	0
6105	0	0	0	0	0	N	0	0
6106	0	0	0	0	0	N	0	0
6107	0	0	0	0	0	N	0	0
6108	0	0	0	0	0	N	0	0
6109	0	0	0	0	0	N	0	0
6110	0	0	0	0	0	N	0	0
n	10	10	10	10	10	10	10	10

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : Administration (non-mating group)

Generation : F0 Sex : Female Week : 5 Dose : EES 50 mg/kg Species : Rat

Animal No.	Rearing	Defecation count
6101	5	0
6102	7	0
6103	4	0
6104	6	0
6105	2	0
6106	4	0
6107	5	0
6108	4	0
6109	4	0
6110	7	0
n	10	10
Mean	5	0
S.D.	2	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : Administration (non-mating group)

Generation : F0 Sex : Female Week : 6 Dose : EES 0 mg/kg Species : Rat

Animal No.	Arousal	Convulsion	Abnormal behavior	Stereotypy	Gait	Posture	Grooming	Urination
5101	0	0	0	0	0	N	0	0
5102	0	0	0	0	0	N	0	0
5103	0	0	0	0	0	N	0	0
5104	0	0	0	0	0	N	0	0
5105	0	0	0	0	0	N	0	0
5106	0	0	0	0	0	N	0	0
5107	0	0	0	0	0	N	0	0
5108	0	0	0	0	0	N	0	0
5109	0	0	0	0	0	N	0	0
5110	0	0	0	0	0	N	0	0
n	10	10	10	10	10	10	10	10

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : Administration (non-mating group)

Generation : F0 Sex : Female Week : 6 Dose : EES 0 mg/kg Species : Rat

Animal No.	Rearing	Defecation count
5101	4	0
5102	4	0
5103	7	0
5104	6	0
5105	10	0
5106	9	0
5107	6	0
5108	12	0
5109	8	0
5110	13	0
n	10	10
Mean	8	0
S.D.	3	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : Administration (non-mating group)

Generation : F0 Sex : Female Week : 6 Dose : EES 50 mg/kg Species : Rat

Animal No.	Arousal	Convulsion	Abnormal behavior	Stereotypy	Gait	Posture	Grooming	Urination
6101	0	0	0	0	0	N	0	0
6102	0	0	0	0	0	N	0	0
6103	0	0	0	0	0	N	0	0
6104	0	0	0	0	0	N	0	1
6105	0	0	0	0	0	N	0	0
6106	0	0	0	0	0	N	0	0
6107	0	0	0	0	0	N	0	0
6108	0	0	0	0	0	N	0	0
6109	0	0	0	0	0	N	0	0
6110	0	0	0	0	0	N	0	0
n	10	10	10	10	10	10	10	10

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Study No. : R-1244

Open field observation

Period : Administration (non-mating group)

Generation : F0 Sex : Female Week : 6 Dose : EES 50 mg/kg Species : Rat

Animal No.	Rearing	Defecation count
6101	5	0
6102	6	0
6103	3	0
6104	5	0
6105	5	0
6106	8	0
6107	6	0
6108	6	0
6109	9	0
6110	8	0
n	10	10
Mean	6	0
S.D.	2	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : Recovery

Generation : F0 Sex : Male Week : 1 Dose : EES 0 mg/kg Species : Rat

Animal No.	Arousal	Convulsion	Abnormal behavior	Stereotypy	Gait	Posture	Grooming	Urination
1008	0	0	0	0	0	N	0	0
1009	0	0	0	0	0	N	0	0
1010	0	0	0	0	0	N	0	0
1011	0	0	0	0	0	N	0	0
1012	0	0	0	0	0	N	0	0
n	5	5	5	5	5	5	5	5

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Generation : F0 Sex : Male Week : 1 Period : Recovery Dose : EES 0 mg/kg Species : Rat

Animal No.	Rearing	Defecation count
1008	3	0
1009	7	0
1010	5	0
1011	2	0
1012	8	0
n	5	5
Mean	5	0
S.D.	3	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation
Period : Recovery
Generation : F0 Sex : Male Week : 1 Dose : EES 50 mg/kg Species : Rat

Animal No.	Arousal	Convulsion	Abnormal behavior	Stereotypy	Gait	Posture	Grooming	Urination
4008	0	0	0	0	0	N	0	0
4009	0	0	0	0	0	N	0	0
4010	0	0	0	0	0	N	0	1
4011	0	0	0	0	0	N	0	0
4012	0	0	0	0	0	N	0	0
n	5	5	5	5	5	5	5	5

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Generation : F0 Sex : Male Week : 1 Period : Recovery Dose : EES 50 mg/kg Species : Rat

Animal No.	Rearing	Defecation count
4008	5	0
4009	4	0
4010	4	0
4011	5	0
4012	2	0
n	5	5
Mean	4	0
S.D.	1	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : Recovery

Generation : F0 Sex : Male Week : 2 Dose : EES 0 mg/kg Species : Rat

Animal No.	Arousal	Convulsion	Abnormal behavior	Stereotypy	Gait	Posture	Grooming	Urination
1008	0	0	0	0	0	N	0	0
1009	0	0	0	0	0	N	0	0
1010	0	0	0	0	0	N	0	0
1011	0	0	0	0	0	N	0	0
1012	0	0	0	0	0	N	0	0
n	5	5	5	5	5	5	5	5

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : Recovery

Generation : F0 Sex : Male Week : 2 Dose : EES 0 mg/kg Species : Rat

Animal No.	Rearing	Defecation count
1008	5	0
1009	6	0
1010	8	0
1011	5	0
1012	3	0
n	5	5
Mean	5	0
S.D.	2	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : Recovery

Generation : F0 Sex : Male Week : 2 Dose : EES 50 mg/kg Species : Rat

Animal No.	Arousal	Convulsion	Abnormal behavior	Stereotypy	Gait	Posture	Grooming	Urination
4008	0	0	0	0	0	N	0	0
4009	0	0	0	0	0	N	0	0
4010	0	0	0	0	0	N	0	0
4011	0	0	0	0	0	N	0	0
4012	0	0	0	0	0	N	0	0
n	5	5	5	5	5	5	5	5

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : Recovery

Generation : F0 Sex : Male Week : 2 Dose : EES 50 mg/kg Species : Rat

Animal No.	Rearing	Defecation count
4008	5	0
4009	5	0
4010	4	0
4011	5	0
4012	3	0
n	5	5
Mean	4	0
S.D.	1	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Study No. : R-1244

Open field observation

Period : Recovery (non-mating group)

Generation : F0 Sex : Female Week : 1 Dose : EES 0 mg/kg Species : Rat

Animal No.	Arousal	Convulsion	Abnormal behavior	Stereotypy	Gait	Posture	Grooming	Urination
5106	0	0	0	0	0	N	0	0
5107	0	0	0	0	0	N	0	0
5108	0	0	0	0	0	N	0	0
5109	0	0	0	0	0	N	0	0
5110	0	0	0	0	0	N	0	0
n	5	5	5	5	5	5	5	5

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : Recovery (non-mating group)

Generation : F0 Sex : Female Week : 1 Dose : EES 0 mg/kg Species : Rat

Animal No.	Rearing	Defecation count
5106	10	0
5107	8	0
5108	10	0
5109	8	0
5110	10	0
n	5	5
Mean	9	0
S.D.	1	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Study No. : R-1244

Open field observation

Period : Recovery (non-mating group)

Generation : F0 Sex : Female Week : 1 Dose : EES 50 mg/kg Species : Rat

Animal No.	Arousal	Convulsion	Abnormal behavior	Stereotypy	Gait	Posture	Grooming	Urination
6106	0	0	0	0	0	N	0	0
6107	0	0	0	0	0	N	0	0
6108	0	0	0	0	0	N	0	0
6109	0	0	0	0	0	N	0	0
6110	0	0	0	0	0	N	0	0
n	5	5	5	5	5	5	5	5

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : Recovery (non-mating group)

Generation : F0 Sex : Female Week : 1 Dose : EES 50 mg/kg Species : Rat

Animal No.	Rearing	Defecation count
6106	8	0
6107	7	0
6108	9	0
6109	14	0
6110	8	0
n	5	5
Mean	9	0
S.D.	3	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 2 - 301 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Open field observation Period : Recovery (non-mating group)

Generation : F0 Sex : Female Week : 2 Dose : EES 0 mg/kg Species : Rat

Animal No.	Arousal	Convulsion	Abnormal behavior	Stereotypy	Gait	Posture	Grooming	Urination
5106	0	0	0	0	0	N	0	0
5107	0	0	0	0	0	N	0	0
5108	0	0	0	0	0	N	0	0
5109	0	0	0	0	0	N	0	0
5110	0	0	0	0	0	N	0	0
n	5	5	5	5	5	5	5	5

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : Recovery (non-mating group)

Generation : F0 Sex : Female Week : 2 Dose : EES 0 mg/kg Species : Rat

Animal No.	Rearing	Defecation count
5106	9	0
5107	7	0
5108	11	0
5109	6	0
5110	12	0
n	5	5
Mean	9	0
S.D.	3	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Open field observation

Period : Recovery (non-mating group)

Generation : F0 Sex : Female Week : 2 Dose : EES 50 mg/kg Species : Rat

Animal No.	Arousal	Convulsion	Abnormal behavior	Stereotypy	Gait	Posture	Grooming	Urination
6106	0	0	0	0	0	N	0	0
6107	0	0	0	0	0	N	0	0
6108	0	0	0	0	0	N	0	0
6109	0	0	0	0	0	N	0	0
6110	0	0	0	0	0	N	0	0
n	5	5	5	5	5	5	5	5

Arousal) -2: Unconscious/semi-conscious, -1: Reduced awareness, 0: Normal, 1: Increased alertness, 2: Markedly alert
Convulsion) 0: None, 1: Minor, 2: Moderate, 3: Severe
Abnormal behavior) 0: None, 1: Minor, 2: Moderate, 3: Severe
Stereotypy) 0: None, 1: Minor, 2: Moderate, 3: Severe
Gait) U: No/minimal location, 0: Normal, 1: Slight, 2: Moderate, 3: Markedly
Posture) N: Normal, F: Flattened, H: Hunched
Grooming) 0: None, 1: Occasional bouts (up to four), 2: Numerous (more than four)
Urination) 0: None, 1: Small amount, 2: Moderate amount, 3: Large/excessive amount
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Study No. : R-1244

Open field observation

Period : Recovery (non-mating group)

Generation : F0 Sex : Female Week : 2 Dose : EES 50 mg/kg Species : Rat

Animal No.	Rearing	Defecation count
6106	6	0
6107	7	0
6108	6	0
6109	10	0
6110	7	0
n	5	5
Mean	7	0
S.D.	2	0

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Manipulative test
Generation : F0 Sex : Male Week : 6 Period : F0 mating Dose : EES 0 mg/kg Species : Rat

Animal No.	Auditory response	Approach response	Touch response	Tail pinch response	Pupillary reflex
1008	0	0	0	0	P
1009	0	0	0	0	P
1010	0	0	0	0	P
1011	0	0	0	0	P
1012	0	0	0	0	P
n	5	5	5	5	5

Animal No.	Aerial righting reflex-1	Aerial righting reflex-2	Aerial righting reflex-3	Aerial righting reflex-total
1008	0	0	0	0
1009	0	0	0	0
1010	0	0	0	0
1011	0	0	0	0
1012	0	0	0	0
n	5	5	5	5

Auditory response) -2: None, -1: Weak, 0: Normal, 1: Exaggerate
Approach response) -1: No reaction/ignores, 0: Normal, 1: Abnormality fearful/aggressive reaction
Touch response) -1: No reaction/ignores, 0: Normal, 1: Abnormality fearful/aggressive reaction
Tail pinch response) -2: None, -1: Weak, 0: Normal, 1: Exaggerate
Pupillary reflex) P: Pass, both, F: Failed, neither, L: Left pupil responds, R: Right pupil responds
Aerial righting reflex-1 to -3) 0: Normal, 1: Failure, 2:None
Aerial righting reflex-total) Total score of 3 times
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Manipulative test Period : F0 mating
Generation : F0 Sex : Male Week : 6 Dose : EES 5 mg/kg Species : Rat

Animal No.	Auditory response	Approach response	Touch response	Tail pinch response	Pupillary reflex
2008	0	0	0	0	P
2009	0	0	0	0	P
2010	0	0	0	0	P
2011	0	0	0	0	P
2012	0	0	0	0	P
n	5	5	5	5	5

Animal No.	Aerial righting reflex-1	Aerial righting reflex-2	Aerial righting reflex-3	Aerial righting reflex-total
2008	0	0	0	0
2009	0	0	0	0
2010	0	0	0	0
2011	0	0	0	0
2012	0	0	0	0
n	5	5	5	5

Auditory response) -2: None, -1: Weak, 0: Normal, 1: Exaggerate
Approach response) -1: No reaction/ignores, 0: Normal, 1: Abnormality fearful/aggressive reaction
Touch response) -1: No reaction/ignores, 0: Normal, 1: Abnormality fearful/aggressive reaction
Tail pinch response) -2: None, -1: Weak, 0: Normal, 1: Exaggerate
Pupillary reflex) P: Pass, both, F: Failed, neither, L: Left pupil responds, R: Right pupil responds
Aerial righting reflex-1 to -3) 0: Normal, 1: Failure, 2:None
Aerial righting reflex-total) Total score of 3 times
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Manipulative test
Generation : F0 Sex : Male Week : 6 Period : F0 mating
Dose : EES 15 mg/kg Species : Rat

Animal No.	Auditory response	Approach response	Touch response	Tail pinch response	Pupillary reflex
3008	0	0	0	0	P
3009	0	0	0	0	P
3010	0	0	0	0	P
3011	0	0	0	0	P
3012	0	0	0	0	P
n	5	5	5	5	5

Animal No.	Aerial right-ing reflex-1	Aerial right-ing reflex-2	Aerial right-ing reflex-3	Aerial right-ing reflex-total
3008	0	0	0	0
3009	0	0	0	0
3010	0	0	0	0
3011	0	0	0	0
3012	0	0	0	0
n	5	5	5	5

Auditory response) -2: None, -1: Weak, 0: Normal, 1: Exaggerate
Approach response) -1: No reaction/ignores, 0: Normal, 1: Abnormality fearful/aggressive reaction
Touch response) -1: No reaction/ignores, 0: Normal, 1: Abnormality fearful/aggressive reaction
Tail pinch response) -2: None, -1: Weak, 0: Normal, 1: Exaggerate
Pupillary reflex) P: Pass, both, F: Failed, neither, L: Left pupil responds, R: Right pupil responds
Aerial righting reflex-1 to -3) 0: Normal, 1: Failure, 2:None
Aerial righting reflex-total) Total score of 3 times
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Manipulative test
Generation : F0 Sex : Male Week : 6 Period : F0 mating
Dose : EES 50 mg/kg Species : Rat

Animal No.	Auditory response	Approach response	Touch response	Tail pinch response	Pupillary reflex
4008	0	0	0	0	P
4009	0	0	0	0	P
4010	0	0	0	0	P
4011	0	0	0	0	P
4012	0	0	0	0	P
n	5	5	5	5	5

Animal No.	Aerial righting reflex-1	Aerial righting reflex-2	Aerial righting reflex-3	Aerial righting reflex-total
4008	0	0	0	0
4009	0	0	0	0
4010	0	0	0	0
4011	0	0	0	0
4012	0	0	0	0
n	5	5	5	5

Auditory response) -2: None, -1: Weak, 0: Normal, 1: Exaggerate
Approach response) -1: No reaction/ignores, 0: Normal, 1: Abnormality fearful/aggressive reaction
Touch response) -1: No reaction/ignores, 0: Normal, 1: Abnormality fearful/aggressive reaction
Tail pinch response) -2: None, -1: Weak, 0: Normal, 1: Exaggerate
Pupillary reflex) P: Pass, both, F: Failed, neither, L: Left pupil responds, R: Right pupil responds
Aerial righting reflex-1 to -3) 0: Normal, 1: Failure, 2:None
Aerial righting reflex-total) Total score of 3 times
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Manipulative test Period : F0 lactation
Generation : F0 Sex : Female Day : 13 Dose : EES 0 mg/kg Species : Rat

Animal No.	Auditory response	Approach response	Touch response	Tail pinch response	Pupillary reflex
1101	0	0	0	0	P
1102	0	0	0	0	P
1106	0	0	0	0	P
1109	0	0	0	0	P
1110	0	0	0	0	P
n	5	5	5	5	5

Animal No.	Aerial righting reflex-1	Aerial righting reflex-2	Aerial righting reflex-3	Aerial righting reflex-total
1101	0	0	0	0
1102	0	0	0	0
1106	0	0	0	0
1109	0	0	0	0
1110	0	0	0	0
n	5	5	5	5

Auditory response) -2: None, -1: Weak, 0: Normal, 1: Exaggerate
Approach response) -1: No reaction/ignores, 0: Normal, 1: Abnormality fearful/aggressive reaction
Touch response) -1: No reaction/ignores, 0: Normal, 1: Abnormality fearful/aggressive reaction
Tail pinch response) -2: None, -1: Weak, 0: Normal, 1: Exaggerate
Pupillary reflex) P: Pass, both, F: Failed, neither, L: Left pupil responds, R: Right pupil responds
Aerial righting reflex-1 to -3) 0: Normal, 1: Failure, 2:None
Aerial righting reflex-total) Total score of 3 times
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Manipulative test Period : F0 lactation
Generation : F0 Sex : Female Day : 13 Dose : EES 5 mg/kg Species : Rat

Animal No.	Auditory response	Approach response	Touch response	Tail pinch response	Pupillary reflex
2101	0	0	0	0	P
2104	0	0	0	0	P
2110	0	0	0	0	P
2111	0	0	0	0	P
2112	0	0	0	0	P
n	5	5	5	5	5

Animal No.	Aerial righting reflex-1	Aerial righting reflex-2	Aerial righting reflex-3	Aerial righting reflex-total
2101	0	0	0	0
2104	0	0	0	0
2110	0	0	0	0
2111	0	0	0	0
2112	0	0	0	0
n	5	5	5	5

Auditory response) -2: None, -1: Weak, 0: Normal, 1: Exaggerate
Approach response) -1: No reaction/ignores, 0: Normal, 1: Abnormality fearful/aggressive reaction
Touch response) -1: No reaction/ignores, 0: Normal, 1: Abnormality fearful/aggressive reaction
Tail pinch response) -2: None, -1: Weak, 0: Normal, 1: Exaggerate
Pupillary reflex) P: Pass, both, F: Failed, neither, L: Left pupil responds, R: Right pupil responds
Aerial righting reflex-1 to -3) 0: Normal, 1: Failure, 2:None
Aerial righting reflex-total) Total score of 3 times
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Manipulative test Period : F0 lactation
Generation : F0 Sex : Female Day : 13 Dose : EES 15 mg/kg Species : Rat

Animal No.	Auditory response	Approach response	Touch response	Tail pinch response	Pupillary reflex
3101	0	0	0	0	P
3106	0	0	0	0	P
3107	0	0	0	0	P
3109	0	0	0	0	P
3111	0	0	0	0	P
n	5	5	5	5	5

Animal No.	Aerial righting reflex-1	Aerial righting reflex-2	Aerial righting reflex-3	Aerial righting reflex-total
3101	0	0	0	0
3106	0	0	0	0
3107	0	0	0	0
3109	0	0	0	0
3111	0	0	0	0
n	5	5	5	5

Auditory response) -2: None, -1: Weak, 0: Normal, 1: Exaggerate
Approach response) -1: No reaction/ignores, 0: Normal, 1: Abnormality fearful/aggressive reaction
Touch response) -1: No reaction/ignores, 0: Normal, 1: Abnormality fearful/aggressive reaction
Tail pinch response) -2: None, -1: Weak, 0: Normal, 1: Exaggerate
Pupillary reflex) P: Pass, both, F: Failed, neither, L: Left pupil responds, R: Right pupil responds
Aerial righting reflex-1 to -3) 0: Normal, 1: Failure, 2:None
Aerial righting reflex-total) Total score of 3 times
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Manipulative test
Generation : F0 Sex : Female Day : 13 Period : F0 lactation
Dose : EES 50 mg/kg Species : Rat

Animal No.	Auditory response	Approach response	Touch response	Tail pinch response	Pupillary reflex
4103	0	0	0	0	P
4105	0	0	0	0	P
4106	0	0	0	0	P
4108	0	0	0	0	P
4112	0	0	0	0	P
n	5	5	5	5	5

Animal No.	Aerial righting reflex-1	Aerial righting reflex-2	Aerial righting reflex-3	Aerial righting reflex-total
4103	0	0	0	0
4105	0	0	0	0
4106	0	0	0	0
4108	0	0	0	0
4112	0	0	0	0
n	5	5	5	5

Auditory response) -2: None, -1: Weak, 0: Normal, 1: Exaggerate
Approach response) -1: No reaction/ignores, 0: Normal, 1: Abnormality fearful/aggressive reaction
Touch response) -1: No reaction/ignores, 0: Normal, 1: Abnormality fearful/aggressive reaction
Tail pinch response) -2: None, -1: Weak, 0: Normal, 1: Exaggerate
Pupillary reflex) P: Pass, both, F: Failed, neither, L: Left pupil responds, R: Right pupil responds
Aerial righting reflex-1 to -3) 0: Normal, 1: Failure, 2:None
Aerial righting reflex-total) Total score of 3 times
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Manipulative test
Period : Administration (non-mating group)
Generation : F0 Sex : Female Week : 6 Dose : EES 0 mg/kg Species : Rat

Animal No.	Auditory response	Approach response	Touch response	Tail pinch response	Pupillary reflex
5106	0	0	0	0	P
5107	0	0	0	0	P
5108	0	0	0	0	P
5109	0	0	0	0	P
5110	0	0	0	0	P
n	5	5	5	5	5

Animal No.	Aerial righting reflex-1	Aerial righting reflex-2	Aerial righting reflex-3	Aerial righting reflex-total
5106	0	0	0	0
5107	0	0	0	0
5108	0	0	0	0
5109	0	0	0	0
5110	0	0	0	0
n	5	5	5	5

Auditory response) -2: None, -1: Weak, 0: Normal, 1: Exaggerate
Approach response) -1: No reaction/ignores, 0: Normal, 1: Abnormality fearful/aggressive reaction
Touch response) -1: No reaction/ignores, 0: Normal, 1: Abnormality fearful/aggressive reaction
Tail pinch response) -2: None, -1: Weak, 0: Normal, 1: Exaggerate
Pupillary reflex) P: Pass, both, F: Failed, neither, L: Left pupil responds, R: Right pupil responds
Aerial righting reflex-1 to -3) 0: Normal, 1: Failure, 2:None
Aerial righting reflex-total) Total score of 3 times
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Manipulative test
Generation : F0 Sex : Female Week : 6 Period : Administration (non-mating group) Dose : EES 50 mg/kg Species : Rat

Animal No.	Auditory response	Approach response	Touch response	Tail pinch response	Pupillary reflex
6106	0	0	0	0	P
6107	0	0	0	0	P
6108	0	0	0	0	P
6109	0	0	0	0	P
6110	0	0	0	0	P
n	5	5	5	5	5

Animal No.	Aerial righting reflex-1	Aerial righting reflex-2	Aerial righting reflex-3	Aerial righting reflex-total
6106	0	0	0	0
6107	0	0	0	0
6108	0	0	0	0
6109	0	0	0	0
6110	0	0	0	0
n	5	5	5	5

Auditory response) -2: None, -1: Weak, 0: Normal, 1: Exaggerate
Approach response) -1: No reaction/ignores, 0: Normal, 1: Abnormality fearful/aggressive reaction
Touch response) -1: No reaction/ignores, 0: Normal, 1: Abnormality fearful/aggressive reaction
Tail pinch response) -2: None, -1: Weak, 0: Normal, 1: Exaggerate
Pupillary reflex) P: Pass, both, F: Failed, neither, L: Left pupil responds, R: Right pupil responds
Aerial righting reflex-1 to -3) 0: Normal, 1: Failure, 2:None
Aerial righting reflex-total) Total score of 3 times
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Manipulative test
Generation : F0 Sex : Male Week : 2 Period : Recovery
Dose : EES 0 mg/kg Species : Rat

Animal No.	Auditory response	Approach response	Touch response	Tail pinch response	Pupillary reflex
1008	0	0	0	0	P
1009	0	0	0	0	P
1010	0	0	0	0	P
1011	0	0	0	0	P
1012	0	0	0	0	P
n	5	5	5	5	5

Animal No.	Aerial righting reflex-1	Aerial righting reflex-2	Aerial righting reflex-3	Aerial righting reflex-total
1008	0	0	0	0
1009	0	0	0	0
1010	0	0	0	0
1011	0	0	0	0
1012	0	0	0	0
n	5	5	5	5

Auditory response) -2: None, -1: Weak, 0: Normal, 1: Exaggerate
Approach response) -1: No reaction/ignores, 0: Normal, 1: Abnormality fearful/aggressive reaction
Touch response) -1: No reaction/ignores, 0: Normal, 1: Abnormality fearful/aggressive reaction
Tail pinch response) -2: None, -1: Weak, 0: Normal, 1: Exaggerate
Pupillary reflex) P: Pass, both, F: Failed, neither, L: Left pupil responds, R: Right pupil responds
Aerial righting reflex-1 to -3) 0: Normal, 1: Failure, 2:None
Aerial righting reflex-total) Total score of 3 times
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Manipulative test Period : Recovery
Generation : F0 Sex : Male Week : 2 Dose : EES 50 mg/kg Species : Rat

Animal No.	Auditory response	Approach response	Touch response	Tail pinch response	Pupillary reflex
4008	0	0	0	0	P
4009	0	0	0	0	P
4010	0	0	0	0	P
4011	0	0	0	0	P
4012	0	0	0	0	P
n	5	5	5	5	5

Animal No.	Aerial righting reflex-1	Aerial righting reflex-2	Aerial righting reflex-3	Aerial righting reflex-total
4008	0	0	0	0
4009	0	0	0	0
4010	0	0	0	0
4011	0	0	0	0
4012	0	0	0	0
n	5	5	5	5

Auditory response) -2: None, -1: Weak, 0: Normal, 1: Exaggerate
Approach response) -1: No reaction/ignores, 0: Normal, 1: Abnormality fearful/aggressive reaction
Touch response) -1: No reaction/ignores, 0: Normal, 1: Abnormality fearful/aggressive reaction
Tail pinch response) -2: None, -1: Weak, 0: Normal, 1: Exaggerate
Pupillary reflex) P: Pass, both, F: Failed, neither, L: Left pupil responds, R: Right pupil responds
Aerial righting reflex-1 to -3) 0: Normal, 1: Failure, 2:None
Aerial righting reflex-total) Total score of 3 times
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Manipulative test
Generation : F0 Sex : Female Week : 2 Period : Recovery (non-mating group)
Dose : EES 0 mg/kg Species : Rat

Animal No.	Auditory response	Approach response	Touch response	Tail pinch response	Pupillary reflex
5106	0	0	0	0	P
5107	0	0	0	0	P
5108	0	0	0	0	P
5109	0	0	0	0	P
5110	0	0	0	0	P
n	5	5	5	5	5

Animal No.	Aerial righting reflex-1	Aerial righting reflex-2	Aerial righting reflex-3	Aerial righting reflex-total
5106	0	0	0	0
5107	0	0	0	0
5108	0	0	0	0
5109	0	0	0	0
5110	0	0	0	0
n	5	5	5	5

Auditory response) -2: None, -1: Weak, 0: Normal, 1: Exaggerate
Approach response) -1: No reaction/ignores, 0: Normal, 1: Abnormality fearful/aggressive reaction
Touch response) -1: No reaction/ignores, 0: Normal, 1: Abnormality fearful/aggressive reaction
Tail pinch response) -2: None, -1: Weak, 0: Normal, 1: Exaggerate
Pupillary reflex) P: Pass, both, F: Failed, neither, L: Left pupil responds, R: Right pupil responds
Aerial righting reflex-1 to -3) 0: Normal, 1: Failure, 2:None
Aerial righting reflex-total) Total score of 3 times
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Manipulative test
Generation : F0 Sex : Female Week : 2 Period : Recovery (non-mating group)
Dose : EES 50 mg/kg Species : Rat

Animal No.	Auditory response	Approach response	Touch response	Tail pinch response	Pupillary reflex
6106	0	0	0	0	P
6107	0	0	0	0	P
6108	0	0	0	0	P
6109	0	0	0	0	P
6110	0	0	0	0	P
n	5	5	5	5	5

Animal No.	Aerial righting reflex-1	Aerial righting reflex-2	Aerial righting reflex-3	Aerial righting reflex-total
6106	0	0	0	0
6107	0	0	0	0
6108	0	0	0	0
6109	0	0	0	0
6110	0	0	0	0
n	5	5	5	5

Auditory response) -2: None, -1: Weak, 0: Normal, 1: Exaggerate
Approach response) -1: No reaction/ignores, 0: Normal, 1: Abnormality fearful/aggressive reaction
Touch response) -1: No reaction/ignores, 0: Normal, 1: Abnormality fearful/aggressive reaction
Tail pinch response) -2: None, -1: Weak, 0: Normal, 1: Exaggerate
Pupillary reflex) P: Pass, both, F: Failed, neither, L: Left pupil responds, R: Right pupil responds
Aerial righting reflex-1 to -3) 0: Normal, 1: Failure, 2:None
Aerial righting reflex-total) Total score of 3 times
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Grip strength

Generation : F0 Sex : Male Week : 6 Period : F0 mating Dose : EES 0 mg/kg Species : Rat

Animal No.	Grip strength of fore limb-1 g	Grip strength of fore limb-2 g	Grip strength of fore limb-mean g	Grip strength of hind limb-1 g	Grip strength of hind limb-2 g	Grip strength of hind limb-mean g
1008	1487	1327	1407	783	623	703
1009	1090	1100	1095	591	547	569
1010	1568	1604	1586	917	838	878
1011	1388	1337	1363	941	867	904
1012	1488	1283	1386	553	498	526
n	5	5	5	5	5	5
Mean	1404	1330	1367	757	675	716
S.D.	187	180	176	180	169	173

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Grip strength of fore/hind limb-mean) mean value of 2 times

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Grip strength

Generation : F0 Sex : Male Week : 6 Period : F0 mating Dose : EES 5 mg/kg Species : Rat

Animal No.	Grip strength of fore limb-1 g	Grip strength of fore limb-2 g	Grip strength of fore limb-mean g	Grip strength of hind limb-1 g	Grip strength of hind limb-2 g	Grip strength of hind limb-mean g
2008	1231	1268	1250	666	858	762
2009	1675	1525	1600	759	540	650
2010	1636	1585	1611	957	1012	985
2011	1372	1413	1393	529	500	515
2012	1419	1312	1366	566	550	558
n	5	5	5	5	5	5
Mean	1467	1421	1444	695	692	694
S.D.	186	135	157	172	229	188

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Grip strength of fore/hind limb-mean) mean value of 2 times

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Grip strength

Generation : F0 Sex : Male Week : 6 Period : F0 mating Dose : EES 15 mg/kg Species : Rat

Animal No.	Grip strength of fore limb-1 g	Grip strength of fore limb-2 g	Grip strength of fore limb-mean g	Grip strength of hind limb-1 g	Grip strength of hind limb-2 g	Grip strength of hind limb-mean g
3008	1150	1048	1099	674	525	600
3009	1470	1308	1389	789	458	624
3010	1493	1340	1417	852	732	792
3011	1888	1578	1733	825	731	778
3012	1434	1317	1376	725	872	799
n	5	5	5	5	5	5
Mean	1487	1318	1403	773	664	719
S.D.	263	188	225	73	169	98

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Grip strength of fore/hind limb-mean) mean value of 2 times

Grip strength

Generation : F0 Sex : Male Week : 6 Period : F0 mating Dose : EES 50 mg/kg Species : Rat

Animal No.	Grip strength of fore limb-1 g	Grip strength of fore limb-2 g	Grip strength of fore limb-mean g	Grip strength of hind limb-1 g	Grip strength of hind limb-2 g	Grip strength of hind limb-mean g
4008	1370	1309	1340	511	489	500
4009	1925	1625	1775	704	552	628
4010	1391	1403	1397	948	746	847
4011	1553	1384	1469	494	527	511
4012	1359	1504	1432	710	842	776
n	5	5	5	5	5	5
Mean	1520	1445	1483	673	631	652
S.D.	240	122	170	185	154	156

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Grip strength of fore/hind limb-mean) mean value of 2 times

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Grip strength

Generation : F0 Sex : Female Day : 13 Period : F0 lactation Dose : EES 0 mg/kg Species : Rat

Animal No.	Grip strength of fore limb-1 g	Grip strength of fore limb-2 g	Grip strength of fore limb-mean g	Grip strength of hind limb-1 g	Grip strength of hind limb-2 g	Grip strength of hind limb-mean g
1101	1356	993	1175	903	919	911
1102	1246	1433	1340	831	509	670
1106	1342	1136	1239	727	829	778
1109	1468	1033	1251	566	744	655
1110	1169	1222	1196	317	343	330
n	5	5	5	5	5	5
Mean	1316	1163	1240	669	669	669
S.D.	114	175	64	234	237	215

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Grip strength of fore/hind limb-mean) mean value of 2 times

Grip strength

Generation : F0 Sex : Female Day : 13 Period : F0 lactation Dose : EES 5 mg/kg Species : Rat

Animal No.	Grip strength of fore limb-1 g	Grip strength of fore limb-2 g	Grip strength of fore limb-mean g	Grip strength of hind limb-1 g	Grip strength of hind limb-2 g	Grip strength of hind limb-mean g
2101	1317	1734	1526	906	697	802
2104	1271	1522	1397	859	848	854
2110	1252	1122	1187	525	498	512
2111	1297	1342	1320	772	715	744
2112	1255	1042	1149	804	792	798
n	5	5	5	5	5	5
Mean	1278	1352	1316	773	710	742
S.D.	28	285	154	148	133	134

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Grip strength of fore/hind limb-mean) mean value of 2 times

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Grip strength

Generation : F0 Sex : Female Day : 13 Period : F0 lactation Dose : EES 15 mg/kg Species : Rat

Animal No.	Grip strength of fore limb-1 g	Grip strength of fore limb-2 g	Grip strength of fore limb-mean g	Grip strength of hind limb-1 g	Grip strength of hind limb-2 g	Grip strength of hind limb-mean g
3101	948	933	941	718	669	694
3106	1219	1406	1313	537	554	546
3107	1176	1229	1203	617	674	646
3109	1396	1580	1488	770	650	710
3111	1119	1212	1166	958	949	954
n	5	5	5	5	5	5
Mean	1172	1272	1222	720	699	710
S.D.	162	241	201	161	148	151

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Grip strength of fore/hind limb-mean) mean value of 2 times

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Grip strength

Generation : F0 Sex : Female Day : 13 Period : F0 lactation Dose : EES 50 mg/kg Species : Rat

Animal No.	Grip strength of fore limb-1 g	Grip strength of fore limb-2 g	Grip strength of fore limb-mean g	Grip strength of hind limb-1 g	Grip strength of hind limb-2 g	Grip strength of hind limb-mean g
4103	1230	1463	1347	543	523	533
4105	1270	1543	1407	579	527	553
4106	1383	1195	1289	632	516	574
4108	1140	1344	1242	235	228	232
4112	1367	1116	1242	746	727	737
n	5	5	5	5	5	5
Mean	1278	1332	1305	547	504	526
S.D.	100	178	71	191	178	183

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Grip strength of fore/hind limb-mean) mean value of 2 times

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Grip strength

Generation : F0 Sex : Female Week : 6 Period : Administration (non-mating group) Dose : EES 0 mg/kg Species : Rat

Animal No.	Grip strength of fore limb-1 g	Grip strength of fore limb-2 g	Grip strength of fore limb-mean g	Grip strength of hind limb-1 g	Grip strength of hind limb-2 g	Grip strength of hind limb-mean g
5106	976	952	964	452	471	462
5107	1250	1316	1283	672	833	753
5108	1012	1032	1022	439	514	477
5109	813	775	794	377	356	367
5110	1117	1069	1093	395	397	396
n	5	5	5	5	5	5
Mean	1034	1029	1031	467	514	491
S.D.	163	196	179	119	189	153

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Grip strength of fore/hind limb-mean) mean value of 2 times

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Grip strength

Generation : F0 Sex : Female Week : 6 Period : Administration (non-mating group) Dose : EES 50 mg/kg Species : Rat

Animal No.	Grip strength of fore limb-1 g	Grip strength of fore limb-2 g	Grip strength of fore limb-mean g	Grip strength of hind limb-1 g	Grip strength of hind limb-2 g	Grip strength of hind limb-mean g
6106	1052	1083	1068	773	763	768
6107	1047	992	1020	465	367	416
6108	1092	1073	1083	682	752	717
6109	1233	1131	1182	823	746	785
6110	1023	1133	1078	798	717	758
n	5	5	5	5	5	5
Mean	1089	1082	1086	708	669	689
S.D.	84	57	59	146	170	155

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Grip strength of fore/hind limb-mean) mean value of 2 times

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Grip strength

Generation : F0 Sex : Male Week : 2 Period : Recovery Dose : EES 0 mg/kg Species : Rat

Animal No.	Grip strength of fore limb-1 g	Grip strength of fore limb-2 g	Grip strength of fore limb-mean g	Grip strength of hind limb-1 g	Grip strength of hind limb-2 g	Grip strength of hind limb-mean g
1008	1634	1612	1623	745	1021	883
1009	1461	1356	1409	567	564	566
1010	1813	2031	1922	1062	1014	1038
1011	1979	1815	1897	759	858	809
1012	1419	1689	1554	614	757	686
n	5	5	5	5	5	5
Mean	1661	1701	1681	749	843	796
S.D.	236	249	223	193	191	181

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Grip strength of fore/hind limb-mean) mean value of 2 times

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Grip strength

Generation : F0 Sex : Male Week : 2 Period : Recovery Dose : EES 50 mg/kg Species : Rat

Animal No.	Grip strength of fore limb-1 g	Grip strength of fore limb-2 g	Grip strength of fore limb-mean g	Grip strength of hind limb-1 g	Grip strength of hind limb-2 g	Grip strength of hind limb-mean g
4008	1705	1887	1796	635	544	590
4009	1978	1979	1979	782	674	728
4010	1376	1225	1301	707	963	835
4011	1313	1275	1294	597	492	545
4012	1658	1602	1630	1021	1130	1076
n	5	5	5	5	5	5
Mean	1606	1594	1600	748	761	755
S.D.	269	344	302	168	276	213

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Grip strength of fore/hind limb-mean) mean value of 2 times

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Grip strength

Generation : F0 Sex : Female Week : 2 Period : Recovery (non-mating group) Dose : EES 0 mg/kg Species : Rat

Animal No.	Grip strength of fore limb-1 g	Grip strength of fore limb-2 g	Grip strength of fore limb-mean g	Grip strength of hind limb-1 g	Grip strength of hind limb-2 g	Grip strength of hind limb-mean g
5106	1595	1481	1538	822	842	832
5107	1362	1469	1416	885	701	793
5108	1392	1573	1483	786	723	755
5109	1002	943	973	302	384	343
5110	1018	1169	1094	466	470	468
n	5	5	5	5	5	5
Mean	1274	1327	1301	652	624	638
S.D.	257	263	251	254	190	219

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Grip strength of fore/hind limb-mean) mean value of 2 times

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Grip strength

Generation : F0 Sex : Female Week : 2 Period : Recovery (non-mating group) Dose : EES 50 mg/kg Species : Rat

Animal No.	Grip strength of fore limb-1 g	Grip strength of fore limb-2 g	Grip strength of fore limb-mean g	Grip strength of hind limb-1 g	Grip strength of hind limb-2 g	Grip strength of hind limb-mean g
6106	1245	1391	1318	703	587	645
6107	933	1113	1023	431	406	419
6108	1195	1182	1189	531	584	558
6109	1422	1692	1557	1199	1115	1157
6110	1335	1177	1256	518	699	609
n	5	5	5	5	5	5
Mean	1226	1311	1269	676	678	678
S.D.	185	237	195	308	266	281

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Grip strength of fore/hind limb-mean) mean value of 2 times

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Motor activity

Generation : F0 Sex : Male Week : 6 Period : F0 mating Dose : EES 0 mg/kg Species : Rat

	0'-10'	10'-20'	20'-30'	30'-40'	40'-50'	50'-60'	Total(0'-60')
Animal No.	Count	Count	Count	Count	Count	Count	Count
1008	302	372	353	256	85	29	1397
1009	310	301	273	45	13	12	954
1010	109	9	145	394	291	257	1205
1011	317	381	297	258	153	23	1429
1012	380	351	313	395	250	35	1724
n	5	5	5	5	5	5	5
Mean	284	283	276	270	158	71	1342
S.D.	102	156	79	143	115	104	285

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Motor activity

Generation : F0 Sex : Male Week : 6 Period : F0 mating Dose : EES 5 mg/kg Species : Rat

	0'-10'	10'-20'	20'-30'	30'-40'	40'-50'	50'-60'	Total(0'-60')
Animal No.	Count	Count	Count	Count	Count	Count	Count
2008	326	316	159	289	238	180	1508
2009	110	3	3	274	395	288	1073
2010	134	337	23	184	49	35	762
2011	426	402	229	314	46	4	1421
2012	210	241	396	144	5	3	999
n	5	5	5	5	5	5	5
Mean	241	260	162	241	147	102	1153
S.D.	133	155	161	73	166	127	309

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Motor activity

Generation : F0 Sex : Male Week : 6 Period : F0 mating Dose : EES 15 mg/kg Species : Rat

	0'-10'	10'-20'	20'-30'	30'-40'	40'-50'	50'-60'	Total(0'-60')
Animal No.	Count	Count	Count	Count	Count	Count	Count
3008	351	165	130	137	91	5	879
3009	235	306	153	109	203	3	1009
3010	346	239	128	124	69	15	921
3011	321	347	324	293	241	7	1533
3012	375	290	260	311	287	116	1639
n	5	5	5	5	5	5	5
Mean	326	269	199	195	178	29	1196
S.D.	54	70	88	99	95	49	361

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Motor activity
Generation : F0 Sex : Male Week : 6 Period : F0 mating
Dose : EES 50 mg/kg Species : Rat

	0'-10'	10'-20'	20'-30'	30'-40'	40'-50'	50'-60'	Total(0'-60')
Animal No.	Count	Count	Count	Count	Count	Count	Count
4008	35	339	28	84	0	0	486
4009	332	320	105	292	286	73	1408
4010	38	155	12	232	187	14	638
4011	236	218	248	387	262	64	1415
4012	352	298	229	314	208	273	1674
n	5	5	5	5	5	5	5
Mean	199	266	124	262	189	85	1124
S.D.	154	77	110	114	113	110	527

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Motor activity

Generation : F0 Sex : Female Day : 13 Period : F0 lactation Dose : EES 0 mg/kg Species : Rat

	0'-10'	10'-20'	20'-30'	30'-40'	40'-50'	50'-60'	Total(0'-60')
Animal No.	Count	Count	Count	Count	Count	Count	Count
1101	394	269	163	176	187	250	1439
1102	283	117	250	77	3	5	735
1106	384	283	77	14	6	2	766
1109	391	311	205	330	313	263	1813
1110	254	207	19	71	23	44	618
n	5	5	5	5	5	5	5
Mean	341	237	143	134	106	113	1074
S.D.	67	77	94	124	139	132	524

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Motor activity
Generation : F0 Sex : Female Day : 13 Period : F0 lactation
Dose : EES 5 mg/kg Species : Rat

	0'-10'	10'-20'	20'-30'	30'-40'	40'-50'	50'-60'	Total(0'-60')
Animal No.	Count	Count	Count	Count	Count	Count	Count
2101	14	46	3	10	15	10	98
2104	280	163	66	39	109	12	669
2110	365	116	8	3	198	0	690
2111	252	86	60	151	12	3	564
2112	133	6	81	13	48	72	353
n	5	5	5	5	5	5	5
Mean	209	83	44	43	76	19	475
S.D.	137	61	36	62	78	30	249

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Motor activity

Generation : F0 Sex : Female Day : 13 Period : F0 lactation Dose : EES 15 mg/kg Species : Rat

	0'-10'	10'-20'	20'-30'	30'-40'	40'-50'	50'-60'	Total(0'-60')
Animal No.	Count	Count	Count	Count	Count	Count	Count
3101	276	137	76	180	65	41	775
3106	278	180	186	129	143	93	1009
3107	270	202	36	38	158	39	743
3109	386	278	22	9	3	243	941
3111	302	149	193	66	155	151	1016
n	5	5	5	5	5	5	5
Mean	302	189	103	84	105	113	897
S.D.	48	56	82	69	68	86	130

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Motor activity

Generation : F0 Sex : Female Day : 13 Period : F0 lactation Dose : EES 50 mg/kg Species : Rat

	0'-10'	10'-20'	20'-30'	30'-40'	40'-50'	50'-60'	Total(0'-60')
Animal No.	Count	Count	Count	Count	Count	Count	Count
4103	306	182	2	10	181	142	823
4105	164	132	210	50	79	100	735
4106	102	24	60	112	14	0	312
4108	468	293	332	281	468	258	2100
4112	381	220	280	215	212	238	1546
n	5	5	5	5	5	5	5
Mean	284	170	177	134	191	148	1103
S.D.	151	101	141	113	174	105	712

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Motor activity

Period : Administration (non-mating group)

Generation : F0 Sex : Female Week : 6 Dose : EES 0 mg/kg Species : Rat

	0'-10'	10'-20'	20'-30'	30'-40'	40'-50'	50'-60'	Total(0'-60')
Animal No.	Count	Count	Count	Count	Count	Count	Count
5106	408	296	192	164	125	159	1344
5107	285	226	211	196	193	77	1188
5108	434	303	149	263	283	1	1433
5109	379	315	12	242	288	182	1418
5110	448	354	385	228	239	44	1698
n	5	5	5	5	5	5	5
Mean	391	299	190	219	226	93	1416
S.D.	65	46	134	39	68	76	185

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Motor activity

Generation : F0 Sex : Female Week : 6 Period : Administration (non-mating group) Dose : EES 50 mg/kg Species : Rat

	0'-10'	10'-20'	20'-30'	30'-40'	40'-50'	50'-60'	Total(0'-60')
Animal No.	Count	Count	Count	Count	Count	Count	Count
6106	321	278	84	238	157	4	1082
6107	422	334	264	197	164	60	1441
6108	308	204	198	133	14	0	857
6109	358	191	124	311	34	0	1018
6110	401	379	355	288	309	248	1980
n	5	5	5	5	5	5	5
Mean	362	277	205	233	136	62	1276
S.D.	49	81	109	71	119	107	448

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Motor activity
Generation : F0 Sex : Male Week : 2 Period : Recovery
Dose : EES 0 mg/kg Species : Rat

	0'-10'	10'-20'	20'-30'	30'-40'	40'-50'	50'-60'	Total(0'-60')
Animal No.	Count	Count	Count	Count	Count	Count	Count
1008	469	430	366	367	357	155	2144
1009	436	386	305	253	261	385	2026
1010	412	255	291	174	201	243	1576
1011	290	143	200	254	192	312	1391
1012	431	372	370	345	413	338	2269
n	5	5	5	5	5	5	5
Mean	408	317	306	279	285	287	1881
S.D.	69	117	69	78	97	90	379

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Motor activity
Generation : F0 Sex : Male Week : 2 Period : Recovery
Dose : EES 50 mg/kg Species : Rat

	0'-10'	10'-20'	20'-30'	30'-40'	40'-50'	50'-60'	Total(0'-60')
Animal No.	Count	Count	Count	Count	Count	Count	Count
4008	365	350	250	295	260	114	1634
4009	398	268	297	262	169	160	1554
4010	416	229	225	129	146	200	1345
4011	480	431	382	408	370	245	2316
4012	414	359	340	301	375	369	2158
n	5	5	5	5	5	5	5
Mean	415	327	299	279	264	218	1801
S.D.	42	80	64	100	108	98	415

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Motor activity

Generation : F0 Sex : Female Week : 2 Period : Recovery (non-mating group) Dose : EES 0 mg/kg Species : Rat

	0'-10'	10'-20'	20'-30'	30'-40'	40'-50'	50'-60'	Total(0'-60')
Animal No.	Count	Count	Count	Count	Count	Count	Count
5106	386	305	222	298	168	95	1474
5107	284	242	170	103	231	162	1192
5108	394	213	206	214	132	192	1351
5109	405	229	261	235	79	10	1219
5110	443	359	362	334	247	216	1961
n	5	5	5	5	5	5	5
Mean	382	270	244	237	171	135	1439
S.D.	59	61	74	89	70	83	313

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Motor activity

Generation : F0 Sex : Female Week : 2 Period : Recovery (non-mating group) Dose : EES 50 mg/kg Species : Rat

	0'-10'	10'-20'	20'-30'	30'-40'	40'-50'	50'-60'	Total(0'-60')
Animal No.	Count	Count	Count	Count	Count	Count	Count
6106	403	87	205	227	65	1	988
6107	352	313	140	362	85	192	1444
6108	364	122	203	216	147	73	1125
6109	440	423	205	115	20	12	1215
6110	409	311	318	268	212	172	1690
n	5	5	5	5	5	5	5
Mean	394	251	214	238	106	90	1292
S.D.	36	142	64	89	75	89	277

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 3 - 1 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Body weight Period : F0 before mating Day 1-15, F0 mating Day 15-43

Sex : Male Dose : EES 0 mg/kg Unit : g Species : Rat

Animal No.	/Day 1	8	15	22	29	36	42	Body weight gain
1001	381	412	436	446	462	485	493	112
1002	400	435	462	477	498	520	530	130
1003	416	444	470	491	508	531	547	131
1004	428	466	493	506	528	544	556	128
1005	432	459	493	514	531	555	564	132
1006	404	434	450	467	492	505	515	111
1007	434	471	503	528	550	572	589	155
1008	403	434	462	480	514	530	546	143
1009	386	416	445	478	507	532	530	144
1010	406	440	470	491	521	538	541	135
1011	400	429	444	475	495	516	517	117
1012	444	489	517	545	574	601	596	152
n	12	12	12	12	12	12	12	12
Mean	411	444	470	492	515	536	544	133
S.D.	20	23	26	28	29	31	30	14

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 3 - 2 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Body weight Period : F0 before mating Day 1-15, F0 mating Day 15-43

Sex : Male Dose : EES 5 mg/kg Unit : g Species : Rat

Animal No.	/Day 1	8	15	22	29	36	42	Body weight gain
2001	393	417	440	458	482	511	518	125
2002	408	432	463	475	498	531	532	124
2003	419	450	477	495	513	533	539	120
2004	393	417	441	462	482	500	524	131
2005	403	433	465	491	513	540	551	148
2006	369	395	423	435	452	471	482	113
2007	425	463	489	519	542	569	589	164
2008	434	465	480	494	499	513	532	98
2009	405	426	457	461	489	520	523	118
2010	416	440	475	491	515	538	529	113
2011	438	459	488	502	531	545	554	116
2012	394	428	454	480	505	535	555	161
n	12	12	12	12	12	12	12	12
Mean	408	435	463	480	502	526	536	128
S.D.	20	21	21	23	24	25	26	20

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 3 - 3 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Body weight Period : F0 before mating Day 1-15, F0 mating Day 15-43

Sex : Male Dose : EES 15 mg/kg Unit : g Species : Rat

Animal No.	/Day 1	8	15	22	29	36	42	Body weight gain
3001	395	431	458	484	508	525	526	131
3002	408	426	450	465	480	501	512	104
3003	383	419	445	463	486	519	527	144
3004	399	433	458	483	507	533	545	146
3005	409	437	459	485	501	523	535	126
3006	395	431	463	479	504	536	538	143
3007	442	479	519	532	557	585	602	160
3008	392	415	447	460	485	501	507	115
3009	420	460	475	494	528	548	554	134
3010	430	450	469	485	512	535	544	114
3011	419	453	484	518	551	581	599	180
3012	438	469	498	514	530	568	587	149
n	12	12	12	12	12	12	12	12
Mean	411	442	469	489	512	538	548	137
S.D.	19	20	22	23	25	28	32	21

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 3 - 4 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Body weight Period : F0 before mating Day 1-15, F0 mating Day 15-43

Sex : Male Dose : EES 50 mg/kg Unit : g Species : Rat

Animal No.	/Day 1	8	15	22	29	36	42	Body weight gain
4001	420	452	491	515	537	559	569	149
4002	406	436	461	473	494	504	515	109
4003	415	439	469	490	521	541	551	136
4004	400	422	452	473	490	511	522	122
4005	413	434	458	476	504	522	539	126
4006	434	467	489	503	536	568	577	143
4007	429	455	475	494	512	543	553	124
4008	414	434	463	485	510	537	544	130
4009	403	438	465	483	501	528	538	135
4010	405	419	435	450	474	500	509	104
4011	371	391	403	417	433	447	455	84
4012	401	424	449	471	490	510	518	117
n	12	12	12	12	12	12	12	12
Mean	409	434	459	478	500	523	533	123
S.D.	16	20	24	25	28	32	32	18

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 3 - 5 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Body weight Period : F0 before mating Day 1-15

Sex : Female Dose : EES 0 mg/kg Unit : g Species : Rat

Animal No.	/Day 1	8	15	Body weight gain
1101	253	272	294	41
1102	228	246	250	22
1103	273	292	302	29
1104	253	281	272	19
1105	251	278	293	42
1106	251	263	274	23
1107	249	261	279	30
1108	257	257	266	9
1109	238	254	266	28
1110	240	249	266	26
1111	220	232	238	18
1112	269	276	292	23
n	12	12	12	12
Mean	249	263	274	26
S.D.	15	17	19	9

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 3 - 6 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Body weight Period : F0 before mating Day 1-15

Sex : Female Dose : EES 5 mg/kg Unit : g Species : Rat

Animal No.	/Day 1	8	15	Body weight gain
2101	258	268	281	23
2102	248	259	269	21
2103	242	258	277	35
2104	249	259	271	22
2105	242	265	280	38
2106	269	284	309	40
2107	256	276	288	32
2108	240	249	266	26
2109	252	263	279	27
2110	248	253	272	24
2111	279	282	303	24
2112	237	235	252	15
n	12	12	12	12
Mean	252	263	279	27
S.D.	12	14	16	7

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 3 - 7 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Body weight Period : F0 before mating Day 1-15

Sex : Female Dose : EES 15 mg/kg Unit : g Species : Rat

Animal No.	/Day 1	8	15	Body weight gain
3101	263	271	285	22
3102	254	271	282	28
3103	248	262	272	24
3104	240	248	252	12
3105	237	250	249	12
3106	236	245	263	27
3107	246	270	284	38
3108	262	266	281	19
3109	250	247	268	18
3110	252	248	258	6
3111	270	273	281	11
3112	269	281	291	22
n	12	12	12	12
Mean	252	261	272	20
S.D.	12	13	14	9

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 3 - 8 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Body weight Period : F0 before mating Day 1-15

Sex : Female Dose : EES 50 mg/kg Unit : g Species : Rat

Animal No.	/Day 1	8	15	Body weight gain
4101	264	282	293	29
4102	256	263	273	17
4103	231	250	264	33
4104	250	267	275	25
4105	240	253	266	26
4106	248	262	268	20
4107	253	267	270	17
4108	249	266	275	26
4109	238	257	270	32
4110	242	249	262	20
4111	266	286	282	16
4112	231	243	258	27
n	12	12	12	12
Mean	247	262	271	24
S.D.	11	13	9	6

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 3 - 9 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Body weight Period : F0 gestation Day 0-25

Sex : Female Dose : EES 0 mg/kg Unit : g Species : Rat

Animal No.	/Day 0	7	14	20	Body weight gain
1101	298	351	387	466	168
1102	257	295	338	425	168
1103	307	340	375	461	154
1104	276	329	386	487	211
1105	293	341	392	483	190
1106	277	312	350	426	149
1107	286	330	380	473	187
1108	270	303	342	425	155
1109	259	300	344	443	184
1110	273	307	356	452	179
1111	243	269	297	355	112
n	11	11	11	11	11
Mean	276	316	359	445	169
S.D.	19	24	29	37	26

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 3 - 10 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Body weight Period : F0 gestation Day 0-25

Sex : Female Dose : EES 5 mg/kg Unit : g Species : Rat

Animal No.	/Day 0	7	14	20	Body weight gain
2101	275	332	368	463	188
2102	292	332	368	451	159
2103	280	320	367	473	193
2104	283	333	372	443	160
2105	280	323	361	455	175
2106	319	352	391	490	171
2107	296	342	379	487	191
2108	271	319	358	454	183
2109	291	327	371	465	174
2110	277	318	352	442	165
2111	311	360	409	527	216
2112	249	296	349	428	179
n	12	12	12	12	12
Mean	285	330	370	465	180
S.D.	18	17	17	27	16

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 3 - 11 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Body weight Period : F0 gestation Day 0-25

Sex : Female Dose : EES 15 mg/kg Unit : g Species : Rat

Animal No.	/Day 0	7	14	20	Body weight gain
3101	295	350	400	501	206
3103	280	315	351	421	141
3104	271	306	350	437	166
3105	247	288	311	341	94
3106	265	297	340	426	161
3107	286	323	351	443	157
3108	294	356	404	498	204
3109	284	337	389	462	178
3110	274	313	362	453	179
3111	290	324	362	458	168
3112	320	373	427	510	190
n	11	11	11	11	11
Mean	282	326	368	450	168
S.D.	19	26	34	47	31

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 3 - 12 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Body weight Period : F0 gestation Day 0-25

Sex : Female Dose : EES 50 mg/kg Unit : g Species : Rat

Animal No.	/Day 0	7	14	20	Body weight gain
4101	293	339	375	464	171
4103	265	307	347	418	153
4104	278	312	358	454	176
4105	270	301	340	422	152
4106	277	316	357	455	178
4107	289	331	362	446	157
4108	278	335	391	484	206
4109	281	334	398	494	213
4110	267	293	337	419	152
4111	287	324	371	453	166
4112	267	307	346	432	165
n	11	11	11	11	11
Mean	277	318	362	449	172
S.D.	10	15	20	25	21

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 3 - 13 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Body weight Period : F0 lactation Day 0-14

Sex : Female Dose : EES 0 mg/kg Unit : g Species : Rat

Animal No.	/Day 0	4	7	13	Body weight gain
1101	369	351	354	389	20
1102	333	328	334	363	30
1103	372	355	354	379	7
1104	372	394	384	403	31
1105	371	381	371	397	26
1106	315	344	359	372	57
1107	355	372	366	387	32
1108	326	342	341	366	40
1109	338	334	338	350	12
1110	327	349	354	369	42
1111	308	302	310	324	16
n	11	11	11	11	11
Mean	344	350	351	373	28
S.D.	24	26	20	22	15

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 3 - 14 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Body weight Period : F0 lactation Day 0-14

Sex : Female Dose : EES 5 mg/kg Unit : g Species : Rat

Animal No.	/Day 0	4	7	13	Body weight gain
2101	351	361	367	399	48
2102	362	364	371	390	28
2103	337	356	361	381	44
2104	382	379	383	399	17
2105	310	353	364	365	55
2106	338	362	373	394	56
2107	349	379	382	405	56
2108	340	353	352	369	29
2109	370	354	360	387	17
2110	340	357	354	359	19
2111	398	389	391	405	7
2112	327	337	338	366	39
n	12	12	12	12	12
Mean	350	362	366	385	35
S.D.	24	14	15	17	17

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 3 - 15 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Body weight Period : F0 lactation Day 0-14

Sex : Female Dose : EES 15 mg/kg Unit : g Species : Rat

Animal No.	/Day 0	4	7	13	Body weight gain
3101	395	395	418	420	25
3103	336	349	351	365	29
3104	355	344	351	379	24
3106	317	329	330	356	39
3107	353	340	332	355	2
3108	389	377	379	392	3
3109	383	391	389	418	35
3110	351	344	350	371	20
3111	343	364	367	374	31
3112	432	426	431	437	5
n	10	10	10	10	10
Mean	365	366	370	387	21
S.D.	34	31	34	29	14

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 3 - 16 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Body weight Period : F0 lactation Day 0-14

Sex : Female Dose : EES 50 mg/kg Unit : g Species : Rat

Animal No.	/Day 0	4	7	13	Body weight gain
4101	334	364	370	386	52
4103	330	335	349	361	31
4104	348	344	353	389	41
4105	325	344	348	357	32
4106	323	345	351	360	37
4107	363	356	355	397	34
4108	398	367	381	423	25
4109	402	394	393	404	2
4110	296	315	323	350	54
4111	353	343	350	370	17
4112	327	336	354	341	14
n	11	11	11	11	11
Mean	345	349	357	376	31
S.D.	32	21	19	25	16

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 3 - 17 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Body weight Period : Administration Day 1-43 (non-mating group)

Sex : Female Dose : EES 0 mg/kg Unit : g Species : Rat

Animal No.	/Day 1	8	15	22	29	36	42	Body weight gain
5101	246	262	260	275	281	291	299	53
5102	247	251	252	263	271	273	277	30
5103	262	267	288	296	308	315	335	73
5104	250	264	273	280	284	293	302	52
5105	247	268	280	290	299	310	315	68
5106	267	271	272	282	291	298	305	38
5107	246	255	286	322	324	320	323	77
5108	244	269	277	288	294	301	306	62
5109	229	241	257	265	276	275	285	56
5110	260	272	278	292	303	310	311	51
n	10	10	10	10	10	10	10	10
Mean	250	262	272	285	293	299	306	56
S.D.	11	10	12	17	16	16	17	15

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 3 - 18 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Body weight Period : Administration Day 1-43 (non-mating group)

Sex : Female Dose : EES 50 mg/kg Unit : g Species : Rat

Animal No.	/Day 1	8	15	22	29	36	42	Body weight gain
6101	245	251	245	253	264	271	276	31
6102	262	274	291	312	326	338	354	92
6103	243	254	262	274	284	291	295	52
6104	256	278	298	311	321	336	333	77
6105	252	260	278	289	295	302	308	56
6106	245	267	278	304	340	327	325	80
6107	220	249	262	275	279	295	303	83
6108	241	255	265	272	277	284	278	37
6109	261	280	293	312	325	342	348	87
6110	258	265	287	300	307	309	319	61
n	10	10	10	10	10	10	10	10
Mean	248	263	276	290	302	310	314	66
S.D.	13	11	17	21	26	25	27	21

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 3 - 19 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Body weight Period : Recovery Day 1-15

Sex : Male Dose : EES 0 mg/kg Unit : g Species : Rat

Animal No.	/Day 1	8	14	Body weight gain
1008	545	573	580	35
1009	535	553	561	26
1010	544	563	572	28
1011	521	532	537	16
1012	599	628	633	34
n	5	5	5	5
Mean	549	570	577	28
S.D.	30	36	35	8

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 3 - 20 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Body weight Period : Recovery Day 1-15

Sex : Male Dose : EES 50 mg/kg Unit : g Species : Rat

Animal No.	/Day 1	8	14	Body weight gain
4008	552	568	579	27
4009	544	561	572	28
4010	512	540	552	40
4011	459	475	485	26
4012	527	547	557	30
n	5	5	5	5
Mean	519	538	549	30
S.D.	37	37	37	6

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 3 - 21 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Body weight Period : Recovery Day 1-15 (non-mating group)

Sex : Female Dose : EES 0 mg/kg Unit : g Species : Rat

Animal No.	/Day 1	8	14	Body weight gain
5106	305	318	318	13
5107	314	329	331	17
5108	312	307	317	5
5109	286	292	296	10
5110	308	315	318	10
n	5	5	5	5
Mean	305	312	316	11
S.D.	11	14	13	4

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 3 - 22 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Body weight Period : Recovery Day 1-15 (non-mating group)

Sex : Female Dose : EES 50 mg/kg Unit : g Species : Rat

Animal No.	/Day 1	8	14	Body weight gain
6106	326	333	320	-6
6107	299	301	319	20
6108	282	284	290	8
6109	347	346	360	13
6110	317	322	326	9
n	5	5	5	5
Mean	314	317	323	9
S.D.	25	25	25	10

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 4 - 1 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Food consumption Period : F0 before mating Day 1-15

Sex : Male Dose : EES 0 mg/kg Unit : g Species : Rat

Animal No.	/Day 2	8	15	Total food consumption
1001	24	28	28	80
1002	26	26	31	83
1003	27	24	24	75
1004	23	29	29	81
1005	29	28	29	86
1006	23	26	25	74
1007	26	28	27	81
1008	28	25	28	81
1009	27	27	25	79
1010	26	28	27	81
1011	23	26	23	72
1012	32	30	29	91
n	12	12	12	12
Mean	26	27	27	80
S.D.	3	2	2	5

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 4 - 2 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Food consumption Period : F0 before mating Day 1-15

Sex : Male Dose : EES 5 mg/kg Unit : g Species : Rat

Animal No.	/Day 2	8	15	Total food consumption
2001	26	26	25	77
2002	25	23	29	77
2003	27	25	27	79
2004	25	23	23	71
2005	28	24	28	80
2006	24	24	26	74
2007	29	29	27	85
2008	32	26	25	83
2009	27	26	28	81
2010	27	23	28	78
2011	29	28	29	86
2012	28	25	24	77
n	12	12	12	12
Mean	27	25	27	79
S.D.	2	2	2	4

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 4 - 3 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Food consumption Period : F0 before mating Day 1-15

Sex : Male Dose : EES 15 mg/kg Unit : g Species : Rat

Animal No.	/Day 2	8	15	Total food consumption
3001	25	27	28	80
3002	24	23	24	71
3003	26	26	25	77
3004	28	27	27	82
3005	29	26	26	81
3006	26	27	30	83
3007	29	32	35	96
3008	26	25	26	77
3009	29	29	28	86
3010	30	28	25	83
3011	28	29	26	83
3012	27	27	26	80
n	12	12	12	12
Mean	27	27	27	82
S.D.	2	2	3	6

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 4 - 4 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Food consumption Period : F0 before mating Day 1-15

Sex : Male Dose : EES 50 mg/kg Unit : g Species : Rat

Animal No.	/Day 2	8	15	Total food consumption
4001	24	24	27	75
4002	26	25	28	79
4003	26	26	31	83
4004	20	24	29	73
4005	14	21	24	59
4006	20	25	25	70
4007	25	28	27	80
4008	22	28	29	79
4009	24	24	25	73
4010	20	22	21	63
4011	23	24	21	68
4012	21	25	26	72
n	12	12	12	12
Mean	22	25	26	73
S.D.	3	2	3	7

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 4 - 5 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Food consumption Period : F0 mating Day 15-43

Sex : Male Dose : EES 0 mg/kg Unit : g Species : Rat

Animal No.	/Day 30	36	42
1001	21	25	24
1002	23	26	26
1003	22	26	23
1004	23	26	22
1005	25	26	28
1006	20	26	24
1007	29	29	28
1008	27	27	27
1009	25	31	25
1010	28	28	28
1011	25	23	23
1012	26	30	26
n	12	12	12
Mean	25	27	25
S.D.	3	2	2

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 4 - 6 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Food consumption Period : F0 mating Day 15-43

Sex : Male Dose : EES 5 mg/kg Unit : g Species : Rat

Animal No.	/Day 30	36	42
2001	26	26	28
2002	28	30	22
2003	24	26	26
2004	23	24	26
2005	25	26	29
2006	21	24	22
2007	26	27	28
2008	17	26	24
2009	27	29	26
2010	28	27	24
2011	27	32	28
2012	27	32	30
n	12	12	12
Mean	25	27	26
S.D.	3	3	3

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 4 - 7 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Food consumption Period : F0 mating Day 15-43

Sex : Male Dose : EES 15 mg/kg Unit : g Species : Rat

Animal No.	/Day 30	36	42
3001	27	25	25
3002	21	27	23
3003	25	28	23
3004	24	27	23
3005	24	26	29
3006	24	29	25
3007	22	32	28
3008	23	27	25
3009	27	29	25
3010	26	30	28
3011	33	34	31
3012	26	31	30
n	12	12	12
Mean	25	29	26
S.D.	3	3	3

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 4 - 8 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Food consumption Period : F0 mating Day 15-43

Sex : Male Dose : EES 50 mg/kg Unit : g Species : Rat

Animal No.	/Day 30	36	42
4001	21	28	23
4002	21	26	26
4003	25	25	25
4004	25	28	23
4005	24	24	22
4006	25	28	25
4007	31	26	28
4008	25	32	27
4009	22	27	24
4010	26	26	26
4011	20	21	20
4012	27	28	25
n	12	12	12
Mean	24	27	25
S.D.	3	3	2

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 4 - 9 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Food consumption Period : F0 before mating Day 1-15

Sex : Female Dose : EES 0 mg/kg Unit : g Species : Rat

Animal No.	/Day 2	8	15	Total food consumption
1101	17	20	23	60
1102	17	15	17	49
1103	20	22	21	63
1104	20	19	18	57
1105	20	18	23	61
1106	20	19	24	63
1107	17	21	24	62
1108	11	17	17	45
1109	21	22	23	66
1110	18	17	19	54
1111	13	19	17	49
1112	17	18	21	56
n	12	12	12	12
Mean	18	19	21	57
S.D.	3	2	3	7

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 4 - 10 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Food consumption Period : F0 before mating Day 1-15

Sex : Female Dose : EES 5 mg/kg Unit : g Species : Rat

Animal No.	/Day 2	8	15	Total food consumption
2101	19	18	19	56
2102	19	18	16	53
2103	19	17	21	57
2104	16	15	18	49
2105	17	23	23	63
2106	20	19	24	63
2107	22	20	23	65
2108	15	19	20	54
2109	18	18	20	56
2110	18	15	20	53
2111	23	18	23	64
2112	19	11	17	47
n	12	12	12	12
Mean	19	18	20	57
S.D.	2	3	3	6

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 4 - 11 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Food consumption Period : F0 before mating Day 1-15

Sex : Female Dose : EES 15 mg/kg Unit : g Species : Rat

Animal No.	/Day 2	8	15	Total food consumption
3101	14	18	22	54
3102	15	18	21	54
3103	17	18	18	53
3104	12	17	15	44
3105	15	17	15	47
3106	18	14	20	52
3107	18	23	22	63
3108	20	24	23	67
3109	18	13	17	48
3110	18	17	16	51
3111	19	17	19	55
3112	17	20	17	54
n	12	12	12	12
Mean	17	18	19	54
S.D.	2	3	3	6

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 4 - 12 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Food consumption Period : F0 before mating Day 1-15

Sex : Female Dose : EES 50 mg/kg Unit : g Species : Rat

Animal No.	/Day 2	8	15	Total food consumption
4101	9	21	22	52
4102	13	16	20	49
4103	14	20	20	54
4104	15	20	21	56
4105	16	15	19	50
4106	16	19	21	56
4107	17	18	15	50
4108	12	21	21	54
4109	16	20	21	57
4110	15	16	17	48
4111	17	20	17	54
4112	18	18	21	57
n	12	12	12	12
Mean	15	19	20	53
S.D.	3	2	2	3

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 4 - 13 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Food consumption Period : F0 gestation Day 0-25

Sex : Female Dose : EES 0 mg/kg Unit : g Species : Rat

Animal No.	/Day 1	7	14	20	Total food consumption
1101	21	29	25	29	104
1102	19	24	21	25	89
1103	17	22	22	29	90
1104	18	30	28	32	108
1105	21	27	28	33	109
1106	23	20	22	26	91
1107	21	27	28	32	108
1108	23	22	22	25	92
1109	26	25	28	30	109
1110	16	23	24	24	87
1111	13	19	17	26	75
n	11	11	11	11	11
Mean	20	24	24	28	97
S.D.	4	4	4	3	12

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 4 - 14 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Food consumption Period : F0 gestation Day 0-25

Sex : Female Dose : EES 5 mg/kg Unit : g Species : Rat

Animal No.	/Day 1	7	14	20	Total food consumption
2101	19	27	28	29	103
2102	17	25	23	25	90
2103	21	24	23	27	95
2104	20	27	26	28	101
2105	19	24	26	24	93
2106	19	27	26	28	100
2107	23	27	26	27	103
2108	22	24	25	24	95
2109	17	22	24	28	91
2110	18	25	22	29	94
2111	23	28	30	39	120
2112	16	21	24	29	90
n	12	12	12	12	12
Mean	20	25	25	28	98
S.D.	2	2	2	4	8

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 4 - 15 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Food consumption Period : F0 gestation Day 0-25

Sex : Female Dose : EES 15 mg/kg Unit : g Species : Rat

Animal No.	/Day 1	7	14	20	Total food consumption
3101	21	28	30	34	113
3103	20	22	23	27	92
3104	19	24	23	30	96
3105	14	19	20	24	77
3106	18	20	20	27	85
3107	19	24	22	25	90
3108	28	30	33	34	125
3109	20	29	29	34	112
3110	25	21	27	31	104
3111	19	21	22	29	91
3112	22	25	33	35	115
n	11	11	11	11	11
Mean	20	24	26	30	100
S.D.	4	4	5	4	15

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 4 - 16 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Food consumption Period : F0 gestation Day 0-25

Sex : Female Dose : EES 50 mg/kg Unit : g Species : Rat

Animal No.	/Day 1	7	14	20	Total food consumption
4101	24	25	23	26	98
4103	17	21	22	21	81
4104	18	22	26	27	93
4105	17	21	18	26	82
4106	22	27	25	25	99
4107	20	24	24	31	99
4108	23	27	26	27	103
4109	24	27	34	31	116
4110	17	18	23	24	82
4111	19	20	22	27	88
4112	20	23	21	25	89
n	11	11	11	11	11
Mean	20	23	24	26	94
S.D.	3	3	4	3	11

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 4 - 17 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Food consumption Period : F0 lactation Day 0-14

Sex : Female Dose : EES 0 mg/kg Unit : g Species : Rat

Animal No.	/Day 2	4	7	13	Total food consumption
1101	24	38	46	71	179
1102	21	36	36	58	151
1103	28	41	42	63	174
1104	33	51	37	63	184
1105	38	48	45	68	199
1106	31	48	48	65	192
1107	33	53	46	69	201
1108	28	47	41	62	178
1109	21	45	44	56	166
1110	34	53	52	74	213
1111	20	29	38	49	136
n	11	11	11	11	11
Mean	28	44	43	63	179
S.D.	6	8	5	7	22

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 4 - 18 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Food consumption Period : F0 lactation Day 0-14

Sex : Female Dose : EES 5 mg/kg Unit : g Species : Rat

Animal No.	/Day 2	4	7	13	Total food consumption
2101	28	53	47	78	206
2102	27	40	43	65	175
2103	34	39	41	71	185
2104	30	42	52	67	191
2105	32	53	55	72	212
2106	38	51	50	65	204
2107	48	57	49	71	225
2108	36	41	43	69	189
2109	25	41	40	69	175
2110	38	43	47	60	188
2111	28	40	39	69	176
2112	29	38	47	63	177
n	12	12	12	12	12
Mean	33	45	46	68	192
S.D.	6	7	5	5	16

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 4 - 19 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Food consumption Period : F0 lactation Day 0-14

Sex : Female Dose : EES 15 mg/kg Unit : g Species : Rat

Animal No.	/Day 2	4	7	13	Total food consumption
3101	35	54	54	74	217
3103	21	44	48	63	176
3104	25	40	40	66	171
3106	33	45	42	58	178
3107	19	35	38	66	158
3108	26	38	46	70	180
3109	31	47	50	70	198
3110	25	43	48	66	182
3111	38	45	46	55	184
3112	30	42	45	66	183
n	10	10	10	10	10
Mean	28	43	46	65	183
S.D.	6	5	5	6	16

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 4 - 20 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Food consumption Period : F0 lactation Day 0-14

Sex : Female Dose : EES 50 mg/kg Unit : g Species : Rat

Animal No.	/Day 2	4	7	13	Total food consumption
4101	33	46	53	64	196
4103	30	47	50	65	192
4104	36	47	47	69	199
4105	33	42	50	56	181
4106	34	50	52	72	208
4107	28	41	39	62	170
4108	19	28	45	69	161
4109	26	49	44	56	175
4110	16	41	39	58	154
4111	15	32	47	60	154
4112	33	46	52	59	190
n	11	11	11	11	11
Mean	28	43	47	63	180
S.D.	8	7	5	6	19

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 4 - 21 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Food consumption Period : Administration Day 1-15(non-mating group)

Sex : Female Dose : EES 0 mg/kg Unit : g Species : Rat

Animal No.	/Day 2	8	15	Total food consumption
5101	17	18	17	52
5102	15	18	15	48
5103	21	15	22	58
5104	19	16	19	54
5105	21	20	22	63
5106	18	19	18	55
5107	20	18	22	60
5108	20	21	18	59
5109	15	16	19	50
5110	19	20	18	57
n	10	10	10	10
Mean	19	18	19	56
S.D.	2	2	2	5

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 4 - 22 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Food consumption Period : Administration Day 1-15(non-mating group)

Sex : Female Dose : EES 50 mg/kg Unit : g Species : Rat

Animal No.	/Day 2	8	15	Total food consumption
6101	14	16	11	41
6102	19	17	22	58
6103	15	15	16	46
6104	19	20	23	62
6105	21	17	21	59
6106	17	20	17	54
6107	17	20	22	59
6108	15	17	19	51
6109	14	21	20	55
6110	19	14	21	54
n	10	10	10	10
Mean	17	18	19	54
S.D.	2	2	4	6

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 4 - 23 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Food consumption Period : Administration Day 15-43(non-mating group)

Sex : Female Dose : EES 0 mg/kg Unit : g Species : Rat

Animal No.	/Day 30	36	42
5101	15	20	20
5102	16	15	15
5103	19	19	22
5104	13	19	23
5105	17	21	17
5106	19	18	20
5107	21	18	17
5108	19	18	18
5109	17	15	17
5110	19	20	21
n	10	10	10
Mean	18	18	19
S.D.	2	2	3

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 4 - 24 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Food consumption Period : Administration Day 15-43(non-mating group)

Sex : Female Dose : EES 50 mg/kg Unit : g Species : Rat

Animal No.	/Day 30	36	42
6101	15	18	19
6102	20	23	19
6103	19	16	17
6104	19	25	19
6105	17	22	19
6106	20	28	15
6107	14	21	20
6108	18	19	12
6109	18	23	17
6110	18	16	19
n	10	10	10
Mean	18	21	18
S.D.	2	4	2

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 4 - 25 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Food consumption Period : Recovery Day 1-15

Sex : Male Dose : EES 0 mg/kg Unit : g Species : Rat

Animal No.	/Day 2	8	14	Total food consumption
1008	29	30	28	87
1009	27	26	33	86
1010	26	25	28	79
1011	30	28	28	86
1012	29	32	29	90
n	5	5	5	5
Mean	28	28	29	86
S.D.	2	3	2	4

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 4 - 26 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Food consumption Period : Recovery Day 1-15

Sex : Male Dose : EES 50 mg/kg Unit : g Species : Rat

Animal No.	/Day 2	8	14	Total food consumption
4008	31	28	30	89
4009	27	25	27	79
4010	27	29	26	82
4011	24	24	22	70
4012	30	28	29	87
n	5	5	5	5
Mean	28	27	27	81
S.D.	3	2	3	8

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 4 - 27 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Food consumption Period : Recovery Day 1-15 (non-mating group)

Sex : Female Dose : EES 0 mg/kg Unit : g Species : Rat

Animal No.	/Day 2	8	14	Total food consumption
5106	18	21	19	58
5107	21	22	21	64
5108	20	14	21	55
5109	18	19	17	54
5110	18	20	17	55
n	5	5	5	5
Mean	19	19	19	57
S.D.	1	3	2	4

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 4 - 28 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Food consumption Period : Recovery Day 1-15 (non-mating group)

Sex : Female Dose : EES 50 mg/kg Unit : g Species : Rat

Animal No.	/Day 2	8	14	Total food consumption
6106	20	21	12	53
6107	18	17	19	54
6108	16	14	17	47
6109	23	16	24	63
6110	17	20	17	54
n	5	5	5	5
Mean	19	18	18	54
S.D.	3	3	4	6

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 5 - 1 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Urinalysis Stage : Week 6 of administration

Sex : Male Dose : EES 0 mg/kg Species : Rat

Animal No.	pH	Protein	Ketones	Glucose	Occult Blood	Bilirubin	Urobilinogen	Color
1008	>=9.0	+/-	+/-	-	-	-	+/-	Y
1009	>=9.0	+/-	+/-	-	+/-	-	+/-	Y
1010	>=9.0	1+	1+	-	-	-	+/-	Y
1011	8.5	-	-	-	-	-	+/-	Y
1012	>=9.0	1+	1+	-	-	-	+/-	Y
n	5	5	5	5	5	5	5	5

Color LY: Light Yellow Y: Yellow DY: Dark Yellow BR: Brown RE: Red RB: Reddish brown WH: White BL: Blue CL: Colorless OT: Other
EES: Ethyl ethyldimethyltetradecylammonium sulphate
Protein) -:Negative , +/-:15 , 1+:30 , 2+:100 , 3+:>=300 mg/dL
Ketones) -:Negative , +/-:5 , 1+:15 , 2+:40 , 3+:80 mg/dL
Glucose) -:Negative , 1+:100 , 2+:250 , 3+:500 , 4+:>=1000 mg/dL
Occult Blood) -:Negative , +/-:0.015 , 1+:0.062 , 2+:0.135 , 3+:0.405 mg/dL
Bilirubin) -:Negative , 1+:0.8 , 2+:1.6 , 3+:3.2 mg/dL
Urobilinogen) +/-:0.1 - 1.0 , 1+:2.0 , 2+:4.0 , 3+:>=8.0 Ehrlich U/dL

Appendix 5 - 2 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Urinalysis Stage : Week 6 of administration

Sex : Male Dose : EES 5 mg/kg Species : Rat

Animal No.	pH	Protein	Ketones	Glucose	Occult Blood	Bilirubin	Urobilinogen	Color
2008	8.0	1+	-	-	-	-	+/-	Y
2009	>=9.0	+/-	-	-	+/-	-	+/-	Y
2010	8.5	1+	+/-	-	+/-	-	+/-	Y
2011	7.5	+/-	-	-	-	-	+/-	Y
2012	>=9.0	+/-	+/-	-	-	-	+/-	Y
n	5	5	5	5	5	5	5	5

Color LY: Light Yellow Y: Yellow DY: Dark Yellow BR: Brown RE: Red RB: Reddish brown WH: White BL: Blue CL: Colorless OT: Other
EES: Ethyl ethyldimethyltetradecylammonium sulphate
Protein) -:Negative , +/-:15 , 1+:30 , 2+:100 , 3+:>=300 mg/dL
Ketones) -:Negative , +/-:5 , 1+:15 , 2+:40 , 3+:80 mg/dL
Glucose) -:Negative , 1+:100 , 2+:250 , 3+:500 , 4+:>=1000 mg/dL
Occult Blood) -:Negative , +/-:0.015 , 1+:0.062 , 2+:0.135 , 3+:0.405 mg/dL
Bilirubin) -:Negative , 1+:0.8 , 2+:1.6 , 3+:3.2 mg/dL
Urobilinogen) +/-:0.1 - 1.0 , 1+:2.0 , 2+:4.0 , 3+:>=8.0 Ehrlich U/dL

Appendix 5 - 3 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Urinalysis Stage : Week 6 of administration

Sex : Male Dose : EES 15 mg/kg Species : Rat

Animal No.	pH	Protein	Ketones	Glucose	Occult Blood	Bilirubin	Urobilinogen	Color
3008	8.5	+/-	-	-	-	-	+/-	Y
3009	8.5	+/-	-	-	-	-	+/-	Y
3010	8.0	+/-	-	-	+/-	-	+/-	Y
3011	8.5	1+	-	-	+/-	-	+/-	Y
3012	8.0	+/-	+/-	-	-	-	+/-	Y
n	5	5	5	5	5	5	5	5

Color LY: Light Yellow Y: Yellow DY: Dark Yellow BR: Brown RE: Red RB: Reddish brown WH: White BL: Blue CL: Colorless OT: Other
EES: Ethyl ethyldimethyltetradecylammonium sulphate
Protein) -:Negative , +/-:15 , 1+:30 , 2+:100 , 3+:>=300 mg/dL
Ketones) -:Negative , +/-:5 , 1+:15 , 2+:40 , 3+:80 mg/dL
Glucose) -:Negative , 1+:100 , 2+:250 , 3+:500 , 4+:>=1000 mg/dL
Occult Blood) -:Negative , +/-:0.015 , 1+:0.062 , 2+:0.135 , 3+:0.405 mg/dL
Bilirubin) -:Negative , 1+:0.8 , 2+:1.6 , 3+:3.2 mg/dL
Urobilinogen) +/-:0.1 - 1.0 , 1+:2.0 , 2+:4.0 , 3+:>=8.0 Ehrlich U/dL

Appendix 5 - 4 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Urinalysis Stage : Week 6 of administration

Sex : Male Dose : EES 50 mg/kg Species : Rat

Animal No.	pH	Protein	Ketones	Glucose	Occult Blood	Bilirubin	Urobilinogen	Color
4008	>=9.0	3+	1+	-	-	1+	+/-	Y
4009	>=9.0	2+	1+	-	-	1+	+/-	Y
4010	8.5	2+	1+	-	1+	-	+/-	Y
4011	6.5	1+	1+	-	-	-	+/-	Y
4012	>=9.0	1+	-	-	-	-	+/-	Y
n	5	5	5	5	5	5	5	5

Color LY: Light Yellow Y: Yellow DY: Dark Yellow BR: Brown RE: Red RB: Reddish brown WH: White BL: Blue CL: Colorless OT: Other
EES: Ethyl ethyldimethyltetradecylammonium sulphate
Protein) -:Negative , +/-:15 , 1+:30 , 2+:100 , 3+:>=300 mg/dL
Ketones) -:Negative , +/-:5 , 1+:15 , 2+:40 , 3+:80 mg/dL
Glucose) -:Negative , 1+:100 , 2+:250 , 3+:500 , 4+:>=1000 mg/dL
Occult Blood) -:Negative , +/-:0.015 , 1+:0.062 , 2+:0.135 , 3+:0.405 mg/dL
Bilirubin) -:Negative , 1+:0.8 , 2+:1.6 , 3+:3.2 mg/dL
Urobilinogen) +/-:0.1 - 1.0 , 1+:2.0 , 2+:4.0 , 3+:>=8.0 Ehrlich U/dL

Appendix 5 - 5 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Urinalysis Stage : Week 6 of administration (non-mating group)

Sex : Female Dose : EES 0 mg/kg Species : Rat

Animal No.	pH	Protein	Ketones	Glucose	Occult Blood	Bilirubin	Urobilinogen	Color
5106	7.5	-	-	-	-	-	+/-	Y
5107	>=9.0	+/-	-	-	-	-	+/-	Y
5108	8.5	-	-	-	-	-	+/-	Y
5109	7.0	+/-	-	-	-	-	+/-	Y
5110	8.0	-	-	-	-	-	+/-	Y
n	5	5	5	5	5	5	5	5

Color LY: Light Yellow Y: Yellow DY: Dark Yellow BR: Brown RE: Red RB: Reddish brown WH: White BL: Blue CL: Colorless OT: Other

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Protein) -:Negative , +/-:15 , 1+:30 , 2+:100 , 3+:>=300 mg/dL

Ketones) -:Negative , +/-:5 , 1+:15 , 2+:40 , 3+:80 mg/dL

Glucose) -:Negative , 1+:100 , 2+:250 , 3+:500 , 4+:>=1000 mg/dL

Occult Blood) -:Negative , +/-:0.015 , 1+:0.062 , 2+:0.135 , 3+:0.405 mg/dL

Bilirubin) -:Negative , 1+:0.8 , 2+:1.6 , 3+:3.2 mg/dL

Urobilinogen) +/-:0.1 - 1.0 , 1+:2.0 , 2+:4.0 , 3+:>=8.0 Ehrlich U/dL

Appendix 5 - 6 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Urinalysis Stage : Week 6 of administration (non-mating group)

Sex : Female Dose : EES 50 mg/kg Species : Rat

Animal No.	pH	Protein	Ketones	Glucose	Occult Blood	Bilirubin	Urobilinogen	Color
6106	8.5	+/-	-	-	-	-	+/-	Y
6107	8.5	-	-	-	-	-	+/-	Y
6108	6.5	2+	1+	-	-	1+	+/-	Y
6109	6.5	2+	+/-	-	-	-	+/-	Y
6110	8.5	-	-	-	-	-	+/-	Y
n	5	5	5	5	5	5	5	5

Color LY: Light Yellow Y: Yellow DY: Dark Yellow BR: Brown RE: Red RB: Reddish brown WH: White BL: Blue CL: Colorless OT: Other

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Protein) -:Negative , +/-:15 , 1+:30 , 2+:100 , 3+:>=300 mg/dL

Ketones) -:Negative , +/-:5 , 1+:15 , 2+:40 , 3+:80 mg/dL

Glucose) -:Negative , 1+:100 , 2+:250 , 3+:500 , 4+:>=1000 mg/dL

Occult Blood) -:Negative , +/-:0.015 , 1+:0.062 , 2+:0.135 , 3+:0.405 mg/dL

Bilirubin) -:Negative , 1+:0.8 , 2+:1.6 , 3+:3.2 mg/dL

Urobilinogen) +/-:0.1 - 1.0 , 1+:2.0 , 2+:4.0 , 3+:>=8.0 Ehrlich U/dL

Appendix 5 - 7 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Urinalysis Stage : Week 6 of administration

Sex : Male Dose : EES 0 mg/kg Species : Rat

Animal No.	RBC	WBC	Squamous epithelial cells	Small round epithelial cells	Cast	Crystal phosphate salts	Crystal calcium oxalate
1008	-	-	+/-	-	-	-	-
1009	-	-	+/-	-	-	-	-
1010	-	-	+/-	-	-	-	-
1011	-	-	+/-	-	-	-	-
1012	-	-	+/-	-	-	-	-
n	5	5	5	5	5	5	5

EES: Ethyl ethyldimethyltetradecylammonium sulphate
RBC) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe
WBC) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe
Squamous epithelial cells) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe
Small round epithelial cells) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe
Cast) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe
Crystal phosphate salts) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe
Crystal calcium oxalate) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe

Appendix 5 - 8 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Urinalysis Stage : Week 6 of administration

Sex : Male Dose : EES 5 mg/kg Species : Rat

Animal No.	RBC	WBC	Squamous epithelial cells	Small round epithelial cells	Cast	Crystal phosphate salts	Crystal calcium oxalate
2008	-	-	+/-	-	-	-	-
2009	-	-	+/-	-	-	-	-
2010	-	-	+/-	-	-	-	-
2011	-	-	+/-	-	-	-	-
2012	-	-	+/-	-	-	-	-
n	5	5	5	5	5	5	5

EES: Ethyl ethyldimethyltetradecylammonium sulphate
RBC) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe
WBC) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe
Squamous epithelial cells) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe
Small round epithelial cells) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe
Cast) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe
Crystal phosphate salts) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe
Crystal calcium oxalate) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe

Appendix 5 - 9 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Urinalysis Stage : Week 6 of administration

Sex : Male Dose : EES 15 mg/kg Species : Rat

Animal No.	RBC	WBC	Squamous epithelial cells	Small round epithelial cells	Cast	Crystal phosphate salts	Crystal calcium oxalate
3008	-	-	+/-	-	-	-	-
3009	-	-	+/-	-	-	-	-
3010	-	-	+/-	-	-	-	-
3011	-	-	+/-	-	-	-	-
3012	-	-	+/-	-	-	-	-
n	5	5	5	5	5	5	5

EES: Ethyl ethyldimethyltetradecylammonium sulphate
RBC) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe
WBC) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe
Squamous epithelial cells) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe
Small round epithelial cells) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe
Cast) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe
Crystal phosphate salts) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe
Crystal calcium oxalate) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe

Appendix 5 - 10 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Urinalysis Stage : Week 6 of administration

Sex : Male Dose : EES 50 mg/kg Species : Rat

Animal No.	RBC	WBC	Squamous epithelial cells	Small round epithelial cells	Cast	Crystal phosphate salts	Crystal calcium oxalate
4008	-	-	+/-	-	-	-	-
4009	-	-	+/-	-	-	-	-
4010	-	-	+/-	-	-	-	-
4011	-	-	+/-	-	-	-	-
4012	-	-	+/-	-	-	-	-
n	5	5	5	5	5	5	5

EES: Ethyl ethyldimethyltetradecylammonium sulphate
RBC) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe
WBC) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe
Squamous epithelial cells) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe
Small round epithelial cells) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe
Cast) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe
Crystal phosphate salts) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe
Crystal calcium oxalate) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe

Appendix 5 - 11 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Urinalysis Stage : Week 6 of administration (non-mating group)

Sex : Female Dose : EES 0 mg/kg Species : Rat

Animal No.	RBC	WBC	Squamous epithelial cells	Small round epithelial cells	Cast	Crystal phosphate salts	Crystal calcium oxalate
5106	-	-	+/-	-	-	-	-
5107	-	-	+/-	-	-	-	-
5108	-	-	+/-	-	-	-	-
5109	-	-	+/-	-	-	-	-
5110	-	-	+/-	-	-	-	-
n	5	5	5	5	5	5	5

EES: Ethyl ethyldimethyltetradecylammonium sulphate
RBC) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe
WBC) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe
Squamous epithelial cells) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe
Small round epithelial cells) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe
Cast) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe
Crystal phosphate salts) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe
Crystal calcium oxalate) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe

Appendix 5 - 12 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Urinalysis Stage : Week 6 of administration (non-mating group)

Sex : Female Dose : EES 50 mg/kg Species : Rat

Animal No.	RBC	WBC	Squamous epithelial cells	Small round epithelial cells	Cast	Crystal phosphate salts	Crystal calcium oxalate
6106	-	-	+/-	-	-	-	-
6107	-	-	+/-	-	-	-	-
6108	-	-	+/-	-	-	-	-
6109	-	-	+/-	-	-	-	-
6110	-	-	+/-	-	-	-	-
n	5	5	5	5	5	5	5

EES: Ethyl ethyldimethyltetradecylammonium sulphate
RBC) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe
WBC) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe
Squamous epithelial cells) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe
Small round epithelial cells) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe
Cast) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe
Crystal phosphate salts) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe
Crystal calcium oxalate) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe

Appendix 5 - 13 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Urinalysis Stage : Week 6 of administration

Sex : Male Dose : EES 0 mg/kg Species : Rat

Animal No.	Water consumption mL/24h	Urine volume mL/24h	Osmotic pressure mOsm/kg	U-Na mmol/24h	U-K mmol/24h	U-Cl mmol/24h
1008	44	20.7	1566	2.9	5.0	3.9
1009	44	16.8	2400	3.4	6.1	4.4
1010	40	15.2	2030	1.9	4.7	3.0
1011	44	14.6	2300	2.5	5.2	3.5
1012	35	16.0	2274	3.0	5.5	4.4
n	5	5	5	5	5	5
Mean	41	16.7	2114	2.7	5.3	3.8
S.D.	4	2.4	335	0.6	0.5	0.6

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 5 - 14 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Urinalysis Stage : Week 6 of administration

Sex : Male Dose : EES 5 mg/kg Species : Rat

Animal No.	Water consumption mL/24h	Urine volume mL/24h	Osmotic pressure mOsm/kg	U-Na mmol/24h	U-K mmol/24h	U-Cl mmol/24h
2008	49	18.7	1500	2.0	4.5	2.7
2009	39	14.6	1834	1.9	4.4	3.1
2010	52	14.2	1940	2.4	4.0	2.8
2011	43	20.4	1530	2.6	4.8	3.4
2012	55	31.5	1450	3.7	6.9	5.0
n	5	5	5	5	5	5
Mean	48	19.9	1651	2.5	4.9	3.4
S.D.	7	7.0	221	0.7	1.1	0.9

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 5 - 15 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Urinalysis Stage : Week 6 of administration

Sex : Male Dose : EES 15 mg/kg Species : Rat

Animal No.	Water consumption mL/24h	Urine volume mL/24h	Osmotic pressure mOsm/kg	U-Na mmol/24h	U-K mmol/24h	U-Cl mmol/24h
3008	50	20.2	1998	3.2	6.2	4.4
3009	42	17.4	2190	3.2	5.5	4.2
3010	36	14.4	2098	2.3	4.7	3.0
3011	54	21.8	1742	2.5	5.6	3.9
3012	48	21.2	1672	2.7	5.7	3.5
n	5	5	5	5	5	5
Mean	46	19.0	1940	2.8	5.5	3.8
S.D.	7	3.1	225	0.4	0.5	0.6

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 5 - 16 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Urinalysis Stage : Week 6 of administration

Sex : Male Dose : EES 50 mg/kg Species : Rat

Animal No.	Water consumption mL/24h	Urine volume mL/24h	Osmotic pressure mOsm/kg	U-Na mmol/24h	U-K mmol/24h	U-Cl mmol/24h
4008	48	11.9	2474	1.4	4.3	2.7
4009	29	7.7	2868	1.5	3.5	2.2
4010	50	11.1	1792	1.4	3.0	2.0
4011	32	11.0	2156	1.5	3.6	2.6
4012	39	21.3	1662	2.9	5.1	4.3
n	5	5	5	5	5	5
Mean	40	12.6	2190	1.7	3.9	2.8
S.D.	9	5.1	495	0.7	0.8	0.9

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 5 - 17 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Urinalysis Stage : Week 6 of administration (non-mating group)

Sex : Female Dose : EES 0 mg/kg Species : Rat

Animal No.	Water consumption mL/24h	Urine volume mL/24h	Osmotic pressure mOsm/kg	U-Na mmol/24h	U-K mmol/24h	U-Cl mmol/24h
5106	46	14.1	1522	1.4	3.3	1.9
5107	26	7.7	1722	0.9	2.0	1.2
5108	65	16.6	1728	1.8	4.4	2.7
5109	61	16.1	940	1.2	2.2	1.6
5110	37	12.6	1728	1.7	3.0	2.2
n	5	5	5	5	5	5
Mean	47	13.4	1528	1.4	3.0	1.9
S.D.	16	3.6	340	0.4	1.0	0.6

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 5 - 18 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Urinalysis Stage : Week 6 of administration (non-mating group)

Sex : Female Dose : EES 50 mg/kg Species : Rat

Animal No.	Water consumption mL/24h	Urine volume mL/24h	Osmotic pressure mOsm/kg	U-Na mmol/24h	U-K mmol/24h	U-Cl mmol/24h
6106	34	13.7	1514	1.6	3.0	2.0
6107	29	8.8	1840	1.3	2.3	1.6
6108	43	6.1	1430	0.5	1.2	0.8
6109	36	10.3	1790	1.2	2.6	1.8
6110	31	11.3	2532	2.0	4.5	2.9
n	5	5	5	5	5	5
Mean	35	10.0	1821	1.3	2.7	1.8
S.D.	5	2.8	434	0.6	1.2	0.8

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 5 - 19 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Urinalysis Stage : Week 2 of recovery

Sex : Male Dose : EES 0 mg/kg Species : Rat

Animal No.	pH	Protein	Ketones	Glucose	Occult Blood	Bilirubin	Urobilinogen	Color
1008	8.5	1+	1+	-	-	-	+/-	Y
1009	>=9.0	1+	1+	-	-	-	+/-	Y
1010	8.5	1+	1+	-	-	-	+/-	Y
1011	>=9.0	2+	1+	-	-	-	+/-	Y
1012	8.5	1+	+/-	-	+/-	-	+/-	Y
n	5	5	5	5	5	5	5	5

Color LY: Light Yellow Y: Yellow DY: Dark Yellow BR: Brown RE: Red RB: Reddish brown WH: White BL: Blue CL: Colorless OT: Other
EES: Ethyl ethyldimethyltetradecylammonium sulphate
Protein) -:Negative , +/-:15 , 1+:30 , 2+:100 , 3+:>=300 mg/dL
Ketones) -:Negative , +/-:5 , 1+:15 , 2+:40 , 3+:80 mg/dL
Glucose) -:Negative , 1+:100 , 2+:250 , 3+:500 , 4+:>=1000 mg/dL
Occult Blood) -:Negative , +/-:0.015 , 1+:0.062 , 2+:0.135 , 3+:0.405 mg/dL
Bilirubin) -:Negative , 1+:0.8 , 2+:1.6 , 3+:3.2 mg/dL
Urobilinogen) +/-:0.1 - 1.0 , 1+:2.0 , 2+:4.0 , 3+:>=8.0 Ehrlich U/dL

Appendix 5 - 20 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Urinalysis Stage : Week 2 of recovery

Sex : Male Dose : EES 50 mg/kg Species : Rat

Animal No.	pH	Protein	Ketones	Glucose	Occult Blood	Bilirubin	Urobilinogen	Color
4008	8.5	1+	1+	-	-	-	+/-	Y
4009	>=9.0	2+	1+	1+	-	1+	+/-	Y
4010	8.5	2+	2+	-	-	-	+/-	Y
4011	>=9.0	2+	2+	-	-	1+	+/-	Y
4012	>=9.0	+/-	+/-	-	+/-	-	+/-	Y
n	5	5	5	5	5	5	5	5

Color LY: Light Yellow Y: Yellow DY: Dark Yellow BR: Brown RE: Red RB: Reddish brown WH: White BL: Blue CL: Colorless OT: Other
EES: Ethyl ethyldimethyltetradecylammonium sulphate
Protein) -:Negative , +/-:15 , 1+:30 , 2+:100 , 3+:>=300 mg/dL
Ketones) -:Negative , +/-:5 , 1+:15 , 2+:40 , 3+:80 mg/dL
Glucose) -:Negative , 1+:100 , 2+:250 , 3+:500 , 4+:>=1000 mg/dL
Occult Blood) -:Negative , +/-:0.015 , 1+:0.062 , 2+:0.135 , 3+:0.405 mg/dL
Bilirubin) -:Negative , 1+:0.8 , 2+:1.6 , 3+:3.2 mg/dL
Urobilinogen) +/-:0.1 - 1.0 , 1+:2.0 , 2+:4.0 , 3+:>=8.0 Ehrlich U/dL

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Study No. : R-1244

Urinalysis

Stage : Week 2 of recovery (non-mating group)

Sex : Female

Dose : EES 0 mg/kg

Species : Rat

Animal No.	pH	Protein	Ketones	Glucose	Occult Blood	Bilirubin	Urobilinogen	Color
5106	7.0	-	-	-	-	-	+/-	Y
5107	8.5	-	-	-	-	-	+/-	Y
5108	8.0	-	-	-	-	-	+/-	Y
5109	6.0	1+	+/-	-	-	-	+/-	Y
5110	>=9.0	-	-	-	-	-	+/-	Y
n	5	5	5	5	5	5	5	5

Color LY: Light Yellow Y: Yellow DY: Dark Yellow BR: Brown RE: Red RB: Reddish brown WH: White BL: Blue CL: Colorless OT: Other
EES: Ethyl ethyldimethyltetradecylammonium sulphate
Protein) -:Negative , +/-:15 , 1+:30 , 2+:100 , 3+:>=300 mg/dL
Ketones) -:Negative , +/-:5 , 1+:15 , 2+:40 , 3+:80 mg/dL
Glucose) -:Negative , 1+:100 , 2+:250 , 3+:500 , 4+:>=1000 mg/dL
Occult Blood) -:Negative , +/-:0.015 , 1+:0.062 , 2+:0.135 , 3+:0.405 mg/dL
Bilirubin) -:Negative , 1+:0.8 , 2+:1.6 , 3+:3.2 mg/dL
Urobilinogen) +/-:0.1 - 1.0 , 1+:2.0 , 2+:4.0 , 3+:>=8.0 Ehrlich U/dL

Urinalysis Stage : Week 2 of recovery (non-mating group)
Sex : Female Dose : EES 50 mg/kg Species : Rat

Animal No.	pH	Protein	Ketones	Glucose	Occult Blood	Bilirubin	Urobilinogen	Color
6106	7.5	-	-	-	-	-	+/-	Y
6107	8.0	-	-	-	-	-	+/-	Y
6108	7.0	-	-	-	-	-	+/-	Y
6109	8.5	-	-	-	-	-	+/-	Y
6110	8.5	1+	+/-	-	-	-	+/-	Y
n	5	5	5	5	5	5	5	5

Color LY: Light Yellow Y: Yellow DY: Dark Yellow BR: Brown RE: Red RB: Reddish brown WH: White BL: Blue CL: Colorless OT: Other
EES: Ethyl ethyldimethyltetradecylammonium sulphate
Protein) -:Negative , +/-:15 , 1+:30 , 2+:100 , 3+:>=300 mg/dL
Ketones) -:Negative , +/-:5 , 1+:15 , 2+:40 , 3+:80 mg/dL
Glucose) -:Negative , 1+:100 , 2+:250 , 3+:500 , 4+:>=1000 mg/dL
Occult Blood) -:Negative , +/-:0.015 , 1+:0.062 , 2+:0.135 , 3+:0.405 mg/dL
Bilirubin) -:Negative , 1+:0.8 , 2+:1.6 , 3+:3.2 mg/dL
Urobilinogen) +/-:0.1 - 1.0 , 1+:2.0 , 2+:4.0 , 3+:>=8.0 Ehrlich U/dL

Appendix 5 - 23 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Urinalysis Stage : Week 2 of recovery

Sex : Male Dose : EES 0 mg/kg Species : Rat

Animal No.	RBC	WBC	Squamous epithelial cells	Small round epithelial cells	Cast	Crystal phosphate salts	Crystal calcium oxalate
1008	-	-	+/-	-	-	+/-	-
1009	-	-	+/-	-	-	+/-	-
1010	-	-	+/-	-	-	-	-
1011	-	-	+/-	-	-	-	-
1012	-	-	+/-	-	-	+/-	-
n	5	5	5	5	5	5	5

EES: Ethyl ethyldimethyltetradecylammonium sulphate
RBC) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe
WBC) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe
Squamous epithelial cells) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe
Small round epithelial cells) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe
Cast) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe
Crystal phosphate salts) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe
Crystal calcium oxalate) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Study No. : R-1244

Urinalysis

Stage : Week 2 of recovery

Sex : Male

Dose : EES 50 mg/kg

Species : Rat

Animal No.	RBC	WBC	Squamous epithelial cells	Small round epithelial cells	Cast	Crystal phosphate salts	Crystal calcium oxalate
4008	-	-	+/-	-	-	-	-
4009	-	-	+/-	-	-	-	-
4010	-	-	+/-	-	-	-	-
4011	-	-	+/-	-	-	-	-
4012	-	-	+/-	-	-	-	-
n	5	5	5	5	5	5	5

EES: Ethyl ethyldimethyltetradecylammonium sulphate
RBC) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe
WBC) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe
Squamous epithelial cells) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe
Small round epithelial cells) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe
Cast) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe
Crystal phosphate salts) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe
Crystal calcium oxalate) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe

Appendix 5 - 25 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Urinalysis Stage : Week 2 of recovery (non-mating group)

Sex : Female Dose : EES 0 mg/kg Species : Rat

Animal No.	RBC	WBC	Squamous epithelial cells	Small round epithelial cells	Cast	Crystal phosphate salts	Crystal calcium oxalate
5106	-	-	+/-	-	-	-	-
5107	-	-	+/-	-	-	-	-
5108	-	-	+/-	-	-	-	-
5109	-	-	+/-	-	-	-	-
5110	-	-	+/-	-	-	-	-
n	5	5	5	5	5	5	5

EES: Ethyl ethyldimethyltetradecylammonium sulphate
RBC) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe
WBC) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe
Squamous epithelial cells) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe
Small round epithelial cells) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe
Cast) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe
Crystal phosphate salts) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe
Crystal calcium oxalate) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe

Urinalysis Stage : Week 2 of recovery (non-mating group)
Sex : Female Dose : EES 50 mg/kg Species : Rat

Animal No.	RBC	WBC	Squamous epithelial cells	Small round epithelial cells	Cast	Crystal phosphate salts	Crystal calcium oxalate
6106	-	-	+/-	-	-	-	-
6107	-	-	+/-	-	-	-	-
6108	-	-	+/-	-	-	-	-
6109	-	-	+/-	-	-	-	-
6110	-	-	+/-	-	-	-	-
n	5	5	5	5	5	5	5

EES: Ethyl ethyldimethyltetradecylammonium sulphate
RBC) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe
WBC) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe
Squamous epithelial cells) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe
Small round epithelial cells) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe
Cast) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe
Crystal phosphate salts) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe
Crystal calcium oxalate) -:Negative , +/-:Slight , 1+:Mild , 2+:Moderate , 3+:Severe

Appendix 5 - 27 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Urinalysis Stage : Week 2 of recovery

Sex : Male Dose : EES 0 mg/kg Species : Rat

Animal No.	Water consumption mL/24h	Urine volume mL/24h	Osmotic pressure mOsm/kg	U-Na mmol/24h	U-K mmol/24h	U-Cl mmol/24h
1008	49	19.2	1504	2.3	4.5	3.0
1009	47	15.8	1476	1.7	3.3	2.2
1010	41	8.5	2080	1.4	2.5	2.0
1011	29	7.0	2636	1.5	2.7	1.8
1012	48	19.4	2052	3.5	5.8	4.5
n	5	5	5	5	5	5
Mean	43	14.0	1950	2.1	3.8	2.7
S.D.	8	5.9	480	0.9	1.4	1.1

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 5 - 28 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Urinalysis Stage : Week 2 of recovery

Sex : Male Dose : EES 50 mg/kg Species : Rat

Animal No.	Water consumption mL/24h	Urine volume mL/24h	Osmotic pressure mOsm/kg	U-Na mmol/24h	U-K mmol/24h	U-Cl mmol/24h
4008	49	16.3	1980	2.7	5.1	3.5
4009	32	8.8	2624	1.8	3.5	2.3
4010	45	10.0	2378	2.0	3.7	2.5
4011	38	10.1	2256	1.6	3.6	2.4
4012	45	20.0	1610	2.5	4.8	3.2
n	5	5	5	5	5	5
Mean	42	13.0	2170	2.1	4.1	2.8
S.D.	7	4.9	389	0.5	0.8	0.5

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 5 - 29 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Urinalysis Stage : Week 2 of recovery (non-mating group)

Sex : Female Dose : EES 0 mg/kg Species : Rat

Animal No.	Water consumption mL/24h	Urine volume mL/24h	Osmotic pressure mOsm/kg	U-Na mmol/24h	U-K mmol/24h	U-Cl mmol/24h
5106	42	15.7	1366	1.9	3.1	2.2
5107	42	13.0	1622	1.6	3.2	2.3
5108	46	14.9	1320	1.6	2.9	2.3
5109	36	9.9	1436	0.9	2.1	1.1
5110	34	13.1	1872	1.8	3.6	2.8
n	5	5	5	5	5	5
Mean	40	13.3	1523	1.6	3.0	2.1
S.D.	5	2.2	226	0.4	0.6	0.6

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Study No. : R-1244

Urinalysis

Stage : Week 2 of recovery (non-mating group)

Sex : Female

Dose : EES 50 mg/kg

Species : Rat

Animal No.	Water consumption mL/24h	Urine volume mL/24h	Osmotic pressure mOsm/kg	U-Na mmol/24h	U-K mmol/24h	U-Cl mmol/24h
6106	46	10.9	1438	1.2	2.2	1.6
6107	48	21.0	1254	2.1	3.8	2.7
6108	41	10.3	1270	1.0	2.0	1.3
6109	49	18.1	1382	2.2	3.5	2.9
6110	38	9.5	2214	1.6	3.1	2.0
n	5	5	5	5	5	5
Mean	44	14.0	1512	1.6	2.9	2.1
S.D.	5	5.2	400	0.5	0.8	0.7

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 6 - 1 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Hematology Stage : End of administration

Sex : Male Dose : EES 0 mg/kg Species : Rat

Animal No.	RBC 10^4/μL	HGB g/dL	HCT %	MCV fL	MCH pg	MCHC g/dL	RDW %	#RETIC 10^9/L	PLT 10^4/μL	WBC 10^2/μL	#LYMP 10^2/μL
1001	830	14.9	43.5	52.4	17.9	34.2	12.8	143.8	98.2	52.9	41.5
1002	893	15.4	44.6	50.0	17.3	34.5	13.4	171.9	113.7	69.8	55.8
1003	893	15.5	45.1	50.5	17.3	34.3	13.5	179.5	99.9	72.5	53.2
1004	857	14.9	43.2	50.4	17.4	34.6	12.7	163.2	110.5	64.8	50.3
1005	820	14.8	43.2	52.7	18.1	34.3	13.0	175.5	82.1	72.5	50.5
n	5	5	5	5	5	5	5	5	5	5	5
Mean	859	15.1	43.9	51.2	17.6	34.4	13.1	166.8	100.9	66.5	50.3
S.D.	34	0.3	0.9	1.3	0.4	0.2	0.4	14.2	12.4	8.2	5.4

Animal No.	#NEUT 10^2/μL	#EOS 10^2/μL	#BASO 10^2/μL	#MONO 10^2/μL	#LUC 10^2/μL	PT s	APTT s	FIB mg/dL
1001	8.9	0.8	0.1	1.2	0.5	13.0	14.9	271
1002	11.5	0.8	0.1	1.1	0.4	14.5	18.7	252
1003	16.6	0.6	0.3	1.5	0.3	16.2	21.9	315
1004	11.1	1.0	0.2	1.5	0.7	13.4	15.0	314
1005	16.4	0.8	0.3	3.3	1.2	14.1	17.4	342
n	5	5	5	5	5	5	5	5
Mean	12.9	0.8	0.2	1.7	0.6	14.2	17.6	299
S.D.	3.4	0.1	0.1	0.9	0.4	1.2	2.9	36

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 6 - 2 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Hematology Stage : End of administration

Sex : Male Dose : EES 5 mg/kg Species : Rat

Animal No.	RBC $10^4/\mu L$	HGB g/dL	HCT %	MCV fL	MCH pg	MCHC g/dL	RDW %	#RETIC $10^9/L$	PLT $10^4/\mu L$	WBC $10^2/\mu L$	#LYMP $10^2/\mu L$
2001	797	15.3	44.4	55.7	19.2	34.5	12.9	163.8	107.9	95.7	75.1
2002	859	15.0	43.2	50.3	17.5	34.8	13.1	149.1	107.3	67.1	52.8
2003	825	15.2	44.3	53.7	18.5	34.4	12.1	165.4	111.3	77.3	47.5
2004	909	15.7	45.5	50.0	17.2	34.5	13.5	180.5	118.0	87.6	66.4
2005	844	15.1	44.0	52.1	17.9	34.3	13.2	180.8	118.1	86.6	64.9
n	5	5	5	5	5	5	5	5	5	5	5
Mean	847	15.3	44.3	52.4	18.1	34.5	13.0	167.9	112.5	82.9	61.3
S.D.	42	0.3	0.8	2.4	0.8	0.2	0.5	13.2	5.3	11.0	11.1

Animal No.	#NEUT $10^2/\mu L$	#EOS $10^2/\mu L$	#BASO $10^2/\mu L$	#MONO $10^2/\mu L$	#LUC $10^2/\mu L$	PT s	APTT s	FIB mg/dL
2001	13.4	2.2	0.3	2.8	1.9	14.9	19.9	267
2002	9.5	1.3	0.1	1.8	1.6	14.9	16.7	309
2003	24.3	1.8	0.2	2.6	0.9	15.1	15.8	287
2004	15.3	1.7	0.3	3.1	0.7	13.2	13.6	279
2005	16.6	1.4	0.2	2.7	0.8	16.1	22.3	303
n	5	5	5	5	5	5	5	5
Mean	15.8	1.7	0.2	2.6	1.2	14.8	17.7	289
S.D.	5.4	0.4	0.1	0.5	0.5	1.0	3.4	17

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 6 - 3 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Hematology Stage : End of administration

Sex : Male Dose : EES 15 mg/kg Species : Rat

Animal No.	RBC $10^4/\mu L$	HGB g/dL	HCT %	MCV fL	MCH pg	MCHC g/dL	RDW %	#RETIC $10^9/L$	PLT $10^4/\mu L$	WBC $10^2/\mu L$	#LYMP $10^2/\mu L$
3001	865	15.5	45.6	52.8	18.0	34.1	12.5	127.0	108.0	57.5	45.8
3002	839	14.7	43.1	51.4	17.5	34.0	12.4	178.3	113.2	84.2	65.1
3003	833	14.7	41.8	50.2	17.6	35.1	13.5	152.5	100.7	47.3	32.3
3004	874	14.8	42.9	49.0	17.0	34.6	14.0	185.6	100.4	60.5	43.8
3005	888	15.6	45.4	51.1	17.6	34.4	12.4	165.4	104.4	91.9	76.3
n	5	5	5	5	5	5	5	5	5	5	5
Mean	860	15.1	43.8	50.9	17.5	34.4	13.0	161.8	105.3	68.3	52.7
S.D.	23	0.5	1.7	1.4	0.4	0.4	0.7	23.2	5.4	18.9	17.7

Animal No.	#NEUT $10^2/\mu L$	#EOS $10^2/\mu L$	#BASO $10^2/\mu L$	#MONO $10^2/\mu L$	#LUC $10^2/\mu L$	PT s	APTT s	FIB mg/dL
3001	8.8	1.1	0.2	1.0	0.6	14.5	21.3	316
3002	12.8	1.6	0.3	3.3	1.2	17.1	21.3	289
3003	12.1	0.9	0.1	1.5	0.4	14.0	17.8	282
3004	12.5	1.0	0.2	1.7	1.3	14.4	18.8	300
3005	11.9	1.0	0.3	2.0	0.5	16.3	20.0	300
n	5	5	5	5	5	5	5	5
Mean	11.6	1.1	0.2	1.9	0.8	15.3	19.8	297
S.D.	1.6	0.3	0.1	0.9	0.4	1.4	1.5	13

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 6 - 4 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Hematology Stage : End of administration

Sex : Male Dose : EES 50 mg/kg Species : Rat

Animal No.	RBC $10^4/\mu L$	HGB g/dL	HCT %	MCV fL	MCH pg	MCHC g/dL	RDW %	#RETIC $10^9/L$	PLT $10^4/\mu L$	WBC $10^2/\mu L$	#LYMP $10^2/\mu L$
4001	837	15.8	44.8	53.5	18.9	35.4	12.7	149.2	114.3	80.1	53.8
4002	854	15.4	43.8	51.3	18.0	35.1	12.7	152.1	107.7	82.1	59.1
4003	864	15.2	44.0	50.9	17.5	34.5	13.9	178.6	103.4	95.8	77.4
4004	775	14.4	41.0	52.9	18.6	35.1	12.7	138.0	121.3	83.3	69.5
4005	840	15.3	44.3	52.7	18.3	34.6	13.9	206.8	109.2	85.5	64.3
n	5	5	5	5	5	5	5	5	5	5	5
Mean	834	15.2	43.6	52.3	18.3	34.9	13.2	164.9	111.2	85.4	64.8
S.D.	35	0.5	1.5	1.1	0.5	0.4	0.7	27.7	6.9	6.2	9.1

Animal No.	#NEUT $10^2/\mu L$	#EOS $10^2/\mu L$	#BASO $10^2/\mu L$	#MONO $10^2/\mu L$	#LUC $10^2/\mu L$	PT s	APTT s	FIB mg/dL
4001	21.2	0.9	0.3	2.5	1.4	14.6	14.9	268
4002	18.1	1.7	0.1	2.1	1.2	15.8	22.8	251
4003	14.4	1.4	0.3	1.3	1.2	13.7	16.0	272
4004	10.1	1.5	0.2	1.5	0.5	14.6	15.8	253
4005	17.5	0.8	0.2	1.8	0.8	14.5	17.0	322
n	5	5	5	5	5	5	5	5
Mean	16.3	1.3	0.2	1.8	1.0	14.6	17.3	273
S.D.	4.2	0.4	0.1	0.5	0.4	0.8	3.2	29

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 6 - 5 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Hematology Stage : End of lactation (F0 dams)

Sex : Female Dose : EES 0 mg/kg Species : Rat

Animal No.	RBC $10^4/\mu L$	HGB g/dL	HCT %	MCV fL	MCH pg	MCHC g/dL	RDW %	#RETIC $10^9/L$	PLT $10^4/\mu L$	WBC $10^2/\mu L$	#LYMP $10^2/\mu L$
1101	738	15.0	44.0	59.7	20.3	34.1	13.8	307.4	129.8	107.2	56.9
1102	780	15.1	42.7	54.8	19.4	35.4	14.0	200.6	124.8	110.3	67.6
1106	774	14.9	42.9	55.5	19.2	34.6	14.7	265.5	113.3	67.0	35.2
1109	759	14.6	42.1	55.6	19.3	34.7	14.2	173.8	115.7	90.7	48.8
1110	757	15.3	43.1	56.9	20.2	35.5	15.8	189.1	108.8	82.1	31.1
n	5	5	5	5	5	5	5	5	5	5	5
Mean	762	15.0	43.0	56.5	19.7	34.9	14.5	227.3	118.5	91.5	47.9
S.D.	16	0.3	0.7	1.9	0.5	0.6	0.8	56.8	8.6	18.0	15.1

Animal No.	#NEUT $10^2/\mu L$	#EOS $10^2/\mu L$	#BASO $10^2/\mu L$	#MONO $10^2/\mu L$	#LUC $10^2/\mu L$	PT s	APTT s	FIB mg/dL
1101	43.8	0.7	0.2	4.2	1.3	14.9	16.6	542
1102	35.8	0.9	0.4	4.3	1.4	14.4	17.3	375
1106	24.1	0.8	0.2	5.1	1.6	14.5	16.0	297
1109	31.4	1.5	0.3	6.0	2.6	15.5	19.3	427
1110	46.1	0.5	0.2	3.1	1.0	13.4	15.3	510
n	5	5	5	5	5	5	5	5
Mean	36.2	0.9	0.3	4.5	1.6	14.5	16.9	430
S.D.	9.0	0.4	0.1	1.1	0.6	0.8	1.5	100

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 6 - 6 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Hematology Stage : End of lactation (F0 dams)

Sex : Female Dose : EES 5 mg/kg Species : Rat

Animal No.	RBC $10^4/\mu L$	HGB g/dL	HCT %	MCV fL	MCH pg	MCHC g/dL	RDW %	#RETIC $10^9/L$	PLT $10^4/\mu L$	WBC $10^2/\mu L$	#LYMP $10^2/\mu L$
2101	761	14.1	40.9	53.8	18.6	34.6	13.5	253.1	102.1	81.1	37.4
2104	699	13.9	39.3	56.2	20.0	35.5	13.4	179.1	128.9	107.3	58.1
2110	767	14.8	40.8	53.2	19.3	36.2	14.2	175.6	113.8	110.8	58.1
2111	718	14.1	40.6	56.6	19.7	34.8	13.7	240.9	102.7	96.1	53.0
2112	745	14.9	41.9	56.2	20.0	35.6	12.9	209.8	108.9	81.6	45.4
n	5	5	5	5	5	5	5	5	5	5	5
Mean	738	14.4	40.7	55.2	19.5	35.3	13.5	211.7	111.3	95.4	50.4
S.D.	29	0.5	0.9	1.6	0.6	0.6	0.5	35.1	11.0	13.9	8.9

Animal No.	#NEUT $10^2/\mu L$	#EOS $10^2/\mu L$	#BASO $10^2/\mu L$	#MONO $10^2/\mu L$	#LUC $10^2/\mu L$	PT s	APTT s	FIB mg/dL
2101	36.7	1.2	0.3	4.2	1.3	15.0	17.7	523
2104	47.1	0.4	0.4	0.8	0.5	12.0	14.7	543
2110	40.7	0.8	0.7	7.1	3.4	14.6	17.5	433
2111	36.2	1.1	0.3	4.3	1.1	14.9	18.0	480
2112	29.3	0.8	0.2	4.1	1.8	14.5	15.0	403
n	5	5	5	5	5	5	5	5
Mean	38.0	0.9	0.4	4.1	1.6	14.2	16.6	476
S.D.	6.5	0.3	0.2	2.2	1.1	1.2	1.6	59

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 6 - 7 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Hematology Stage : End of lactation (F0 dams)

Sex : Female Dose : EES 15 mg/kg Species : Rat

Animal No.	RBC 10^4/μL	HGB g/dL	HCT %	MCV fL	MCH pg	MCHC g/dL	RDW %	#RETIC 10^9/L	PLT 10^4/μL	WBC 10^2/μL	#LYMP 10^2/μL
3101	752	15.1	44.2	58.8	20.1	34.2	14.7	190.4	129.6	105.6	57.8
3106	741	15.0	43.2	58.4	20.3	34.8	13.7	230.6	104.6	127.7	64.2
3107	793	14.7	41.0	51.7	18.5	35.8	14.0	181.7	119.2	98.7	36.0
3109	768	14.5	41.6	54.2	18.8	34.8	12.6	161.1	146.6	82.2	43.0
3111	695	13.7	39.0	56.0	19.7	35.2	13.6	174.9	115.8	101.5	48.4
n	5	5	5	5	5	5	5	5	5	5	5
Mean	750	14.6	41.8	55.8	19.5	35.0	13.7	187.7	123.2	103.1	49.9
S.D.	36	0.6	2.0	3.0	0.8	0.6	0.8	26.2	15.9	16.4	11.3

Animal No.	#NEUT 10^2/μL	#EOS 10^2/μL	#BASO 10^2/μL	#MONO 10^2/μL	#LUC 10^2/μL	PT s	APTT s	FIB mg/dL
3101	40.0	1.3	0.3	3.8	2.3	16.1	16.9	393
3106	50.7	1.9	0.3	7.3	3.4	15.0	23.2	430
3107	55.4	1.5	0.2	5.0	0.6	14.2	17.1	308
3109	33.1	0.6	0.2	3.8	1.5	13.7	13.0	386
3111	46.1	1.1	0.2	3.6	2.0	10.2	8.5	591
n	5	5	5	5	5	5	5	5
Mean	45.1	1.3	0.2	4.7	2.0	13.8	15.7	422
S.D.	8.8	0.5	0.1	1.6	1.0	2.2	5.4	105

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 6 - 8 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Hematology Stage : End of lactation (F0 dams)

Sex : Female Dose : EES 50 mg/kg Species : Rat

Animal No.	RBC 10^4/μL	HGB g/dL	HCT %	MCV fL	MCH pg	MCHC g/dL	RDW %	#RETIC 10^9/L	PLT 10^4/μL	WBC 10^2/μL	#LYMP 10^2/μL
4103	761	15.1	43.8	57.5	19.9	34.6	13.0	186.6	109.6	105.3	50.8
4105	735	15.2	44.3	60.3	20.7	34.4	14.8	198.4	135.3	88.7	39.4
4106	760	15.6	45.5	59.8	20.5	34.2	15.9	219.7	105.1	76.3	42.3
4108	717	15.2	44.7	62.3	21.3	34.1	14.7	277.9	109.8	75.6	28.5
4112	683	14.1	40.1	58.7	20.7	35.2	14.7	163.4	118.7	113.3	54.3
n	5	5	5	5	5	5	5	5	5	5	5
Mean	731	15.0	43.7	59.7	20.6	34.5	14.6	209.2	115.7	91.8	43.1
S.D.	33	0.6	2.1	1.8	0.5	0.4	1.0	43.5	12.0	17.0	10.2

Animal No.	#NEUT 10^2/μL	#EOS 10^2/μL	#BASO 10^2/μL	#MONO 10^2/μL	#LUC 10^2/μL	PT s	APTT s	FIB mg/dL
4103	45.9	0.8	0.3	5.5	2.0	15.3	17.6	492
4105	37.5	0.8	0.3	8.6	2.2	14.8	16.1	356
4106	27.4	1.2	0.2	4.6	0.6	15.9	16.9	428
4108	42.1	0.9	0.2	2.8	1.0	16.8	22.7	644
4112	48.6	1.5	0.4	6.4	2.0	13.8	15.3	486
n	5	5	5	5	5	5	5	5
Mean	40.3	1.0	0.3	5.6	1.6	15.3	17.7	481
S.D.	8.3	0.3	0.1	2.1	0.7	1.1	2.9	106

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 6 - 9 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Hematology Stage : End of administration (non-mating group)

Sex : Female Dose : EES 0 mg/kg Species : Rat

Animal No.	RBC $10^4/\mu L$	HGB g/dL	HCT %	MCV fL	MCH pg	MCHC g/dL	RDW %	#RETIC $10^9/L$	PLT $10^4/\mu L$	WBC $10^2/\mu L$	#LYMP $10^2/\mu L$
5101	783	14.5	40.9	52.3	18.6	35.5	13.2	229.2	100.5	52.7	43.9
5102	775	14.6	39.6	51.1	18.8	36.8	13.2	152.5	104.7	48.9	33.8
5103	759	14.3	40.6	53.5	18.9	35.3	12.7	189.0	119.6	58.0	46.2
5104	760	14.3	40.8	53.7	18.9	35.1	12.1	167.1	121.1	42.1	31.7
5105	796	14.7	42.2	53.0	18.5	34.8	12.0	104.5	105.4	60.2	49.4
n	5	5	5	5	5	5	5	5	5	5	5
Mean	775	14.5	40.8	52.7	18.7	35.5	12.6	168.5	110.3	52.4	41.0
S.D.	16	0.2	0.9	1.1	0.2	0.8	0.6	46.0	9.4	7.3	7.8

Animal No.	#NEUT $10^2/\mu L$	#EOS $10^2/\mu L$	#BASO $10^2/\mu L$	#MONO $10^2/\mu L$	#LUC $10^2/\mu L$	PT s	APTT s	FIB mg/dL
5101	6.5	0.5	0.2	1.2	0.4	13.5	12.7	210
5102	12.0	0.5	0.1	1.6	0.9	14.8	19.8	225
5103	8.1	1.5	0.0	1.7	0.4	15.3	15.6	225
5104	7.5	0.9	0.1	1.5	0.4	14.6	13.6	173
5105	7.7	1.4	0.2	0.7	0.7	14.7	13.9	193
n	5	5	5	5	5	5	5	5
Mean	8.4	1.0	0.1	1.3	0.6	14.6	15.1	205
S.D.	2.1	0.5	0.1	0.4	0.2	0.7	2.8	22

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 6 - 10 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Hematology Stage : End of administration (non-mating group)

Sex : Female Dose : EES 50 mg/kg Species : Rat

Animal No.	RBC $10^4/\mu L$	HGB g/dL	HCT %	MCV fL	MCH pg	MCHC g/dL	RDW %	#RETIC $10^9/L$	PLT $10^4/\mu L$	WBC $10^2/\mu L$	#LYMP $10^2/\mu L$
6101	809	14.5	42.3	52.3	18.0	34.3	13.0	188.0	109.8	56.6	44.5
6102	763	14.6	42.0	55.0	19.2	34.9	13.0	170.3	120.1	89.3	74.0
6103	780	14.6	41.2	52.8	18.8	35.6	12.4	124.7	127.8	91.0	63.3
6104	788	14.7	42.1	53.4	18.6	34.8	13.0	156.2	118.8	79.3	67.4
6105	790	14.4	41.6	52.6	18.2	34.5	12.1	146.6	113.7	46.5	31.3
n	5	5	5	5	5	5	5	5	5	5	5
Mean	786	14.6	41.8	53.2	18.6	34.8	12.7	157.2	118.0	72.5	56.1
S.D.	17	0.1	0.4	1.1	0.5	0.5	0.4	23.9	6.8	20.0	17.7

Animal No.	#NEUT $10^2/\mu L$	#EOS $10^2/\mu L$	#BASO $10^2/\mu L$	#MONO $10^2/\mu L$	#LUC $10^2/\mu L$	PT s	APTT s	FIB mg/dL
6101	9.9	0.6	0.2	1.0	0.5	14.4	15.7	214
6102	9.8	0.9	0.3	2.5	1.8	14.4	13.1	247
6103	23.9	0.9	0.1	1.6	1.1	14.4	14.1	179
6104	9.1	0.9	0.2	1.0	0.7	13.5	12.6	195
6105	13.3	0.7	0.1	0.7	0.3	16.0	13.1	220
n	5	5	5	5	5	5	5	5
Mean	13.2	0.8	0.2	1.4	0.9	14.5	13.7	211
S.D.	6.2	0.1	0.1	0.7	0.6	0.9	1.2	26

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 6 - 11 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Hematology Stage : End of recovery

Sex : Male Dose : EES 0 mg/kg Species : Rat

Animal No.	RBC $10^4/\mu L$	HGB g/dL	HCT %	MCV fL	MCH pg	MCHC g/dL	RDW %	#RETIC $10^9/L$	PLT $10^4/\mu L$	WBC $10^2/\mu L$	#LYMP $10^2/\mu L$
1008	884	15.4	44.9	50.8	17.4	34.3	12.1	133.9	91.6	96.6	73.6
1009	895	15.7	45.8	51.2	17.5	34.2	12.5	157.0	131.0	105.0	83.7
1010	904	15.4	44.1	48.8	17.1	34.9	13.3	140.0	104.7	77.5	61.1
1011	831	14.6	40.3	48.4	17.5	36.2	12.4	78.6	100.4	78.9	62.3
1012	860	14.8	43.1	50.1	17.2	34.4	13.3	187.4	113.6	56.0	44.4
n	5	5	5	5	5	5	5	5	5	5	5
Mean	875	15.2	43.6	49.9	17.3	34.8	12.7	139.4	108.3	82.8	65.0
S.D.	30	0.5	2.1	1.2	0.2	0.8	0.5	39.8	15.0	19.0	14.8

Animal No.	#NEUT $10^2/\mu L$	#EOS $10^2/\mu L$	#BASO $10^2/\mu L$	#MONO $10^2/\mu L$	#LUC $10^2/\mu L$	PT s	APTT s	FIB mg/dL
1008	16.3	1.4	0.3	3.1	2.0	15.8	23.1	294
1009	16.4	1.6	0.2	2.3	0.8	15.2	20.8	330
1010	11.7	1.3	0.3	2.7	0.4	15.2	16.2	289
1011	12.0	1.6	0.2	1.8	1.0	16.1	19.9	283
1012	9.4	0.3	0.1	1.5	0.3	15.5	18.7	313
n	5	5	5	5	5	5	5	5
Mean	13.2	1.2	0.2	2.3	0.9	15.6	19.7	302
S.D.	3.1	0.5	0.1	0.6	0.7	0.4	2.6	19

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 6 - 12 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Hematology Stage : End of recovery

Sex : Male Dose : EES 50 mg/kg Species : Rat

Animal No.	RBC $10^4/\mu L$	HGB g/dL	HCT %	MCV fL	MCH pg	MCHC g/dL	RDW %	#RETIC $10^9/L$	PLT $10^4/\mu L$	WBC $10^2/\mu L$	#LYMP $10^2/\mu L$
4008	845	15.0	43.0	50.9	17.8	35.0	12.6	143.4	101.7	88.6	64.3
4009	792	14.5	42.0	53.0	18.3	34.4	12.8	124.2	109.9	97.7	74.0
4010	841	15.3	43.9	52.2	18.2	34.9	13.1	136.3	127.0	82.5	64.7
4011	878	16.0	45.9	52.3	18.3	34.9	12.4	131.8	114.2	67.4	51.5
4012	943	16.2	48.2	51.1	17.2	33.7	11.9	119.7	101.0	72.4	55.1
n	5	5	5	5	5	5	5	5	5	5	5
Mean	860	15.4	44.6	51.9	18.0	34.6	12.6	131.1	110.8	81.7	61.9
S.D.	56	0.7	2.5	0.9	0.5	0.5	0.5	9.4	10.6	12.2	8.9

Animal No.	#NEUT $10^2/\mu L$	#EOS $10^2/\mu L$	#BASO $10^2/\mu L$	#MONO $10^2/\mu L$	#LUC $10^2/\mu L$	PT s	APTT s	FIB mg/dL
4008	19.2	1.4	0.3	2.8	0.6	15.0	19.8	337
4009	17.4	1.2	0.3	3.2	1.6	14.7	20.4	272
4010	13.2	1.1	0.2	2.3	1.0	15.2	19.5	287
4011	12.9	0.7	0.2	1.5	0.6	16.6	21.7	276
4012	13.2	1.3	0.3	1.9	0.6	16.6	21.0	328
n	5	5	5	5	5	5	5	5
Mean	15.2	1.1	0.3	2.3	0.9	15.6	20.5	300
S.D.	2.9	0.3	0.1	0.7	0.4	0.9	0.9	30

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 6 - 13 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Hematology Stage : End of recovery (non-mating group)

Sex : Female Dose : EES 0 mg/kg Species : Rat

Animal No.	RBC $10^4/\mu L$	HGB g/dL	HCT %	MCV fL	MCH pg	MCHC g/dL	RDW %	#RETIC $10^9/L$	PLT $10^4/\mu L$	WBC $10^2/\mu L$	#LYMP $10^2/\mu L$
5106	797	15.2	43.4	54.4	19.1	35.1	11.0	134.6	102.8	99.3	85.1
5107	785	15.0	41.1	52.4	19.1	36.5	11.1	93.7	94.3	90.5	63.7
5108	798	14.5	40.2	50.4	18.1	36.0	11.7	105.4	97.5	58.6	47.1
5109	798	15.3	42.3	53.0	19.2	36.2	11.3	106.7	115.0	66.4	57.6
5110	821	14.7	41.3	50.3	17.9	35.6	11.9	106.6	121.8	51.8	37.2
n	5	5	5	5	5	5	5	5	5	5	5
Mean	800	14.9	41.7	52.1	18.7	35.9	11.4	109.4	106.3	73.3	58.1
S.D.	13	0.3	1.2	1.8	0.6	0.5	0.4	15.1	11.7	20.6	18.2

Animal No.	#NEUT $10^2/\mu L$	#EOS $10^2/\mu L$	#BASO $10^2/\mu L$	#MONO $10^2/\mu L$	#LUC $10^2/\mu L$	PT s	APTT s	FIB mg/dL
5106	9.3	1.4	0.2	2.2	1.1	14.5	15.4	206
5107	21.5	1.9	0.2	2.5	0.7	15.3	16.0	226
5108	8.9	0.7	0.1	1.0	0.7	15.1	14.4	234
5109	5.5	0.9	0.1	1.2	1.1	16.0	17.2	186
5110	10.7	1.2	0.0	1.7	1.0	17.1	20.2	286
n	5	5	5	5	5	5	5	5
Mean	11.2	1.2	0.1	1.7	0.9	15.6	16.6	228
S.D.	6.1	0.5	0.1	0.6	0.2	1.0	2.2	38

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 6 - 14 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Hematology Stage : End of recovery (non-mating group)

Sex : Female Dose : EES 50 mg/kg Species : Rat

Animal No.	RBC $10^4/\mu L$	HGB g/dL	HCT %	MCV fL	MCH pg	MCHC g/dL	RDW %	#RETIC $10^9/L$	PLT $10^4/\mu L$	WBC $10^2/\mu L$	#LYMP $10^2/\mu L$
6106	850	15.8	44.0	51.8	18.5	35.8	11.1	82.7	123.2	93.0	77.3
6107	882	15.9	45.0	51.0	18.1	35.4	11.4	98.0	106.2	64.7	44.7
6108	827	14.8	42.0	50.7	17.9	35.3	11.4	101.4	114.8	56.7	47.1
6109	766	14.9	43.0	56.1	19.5	34.7	12.3	190.5	103.9	61.3	47.7
6110	840	15.5	43.2	51.5	18.5	35.9	11.9	106.8	115.8	56.5	47.3
n	5	5	5	5	5	5	5	5	5	5	5
Mean	833	15.4	43.4	52.2	18.5	35.4	11.6	115.9	112.8	66.4	52.8
S.D.	43	0.5	1.1	2.2	0.6	0.5	0.5	42.7	7.8	15.2	13.7

Animal No.	#NEUT $10^2/\mu L$	#EOS $10^2/\mu L$	#BASO $10^2/\mu L$	#MONO $10^2/\mu L$	#LUC $10^2/\mu L$	PT s	APTT s	FIB mg/dL
6106	10.1	2.4	0.2	2.2	0.7	15.3	17.1	189
6107	14.9	1.8	0.1	2.7	0.4	15.4	17.0	217
6108	6.1	1.3	0.2	1.6	0.4	15.7	18.4	181
6109	10.8	1.2	0.2	1.0	0.3	15.5	14.6	220
6110	6.1	0.9	0.1	1.5	0.5	16.5	15.9	211
n	5	5	5	5	5	5	5	5
Mean	9.6	1.5	0.2	1.8	0.5	15.7	16.6	204
S.D.	3.7	0.6	0.1	0.7	0.2	0.5	1.4	18

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 7 - 1 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Blood chemistry Stage : End of administration

Sex : Male Dose : EES 0 mg/kg Species : Rat

Animal No.	AST IU/L	ALT IU/L	ALP IU/L	γ-GTP IU/L	T-BA μmol/L	T-CHO mg/dL	TG mg/dL	PL mg/dL	T-BIL mg/dL	GLU mg/dL	BUN mg/dL
1001	58	31	330	0	4.9	64	27	94	0.1	129	15
1002	62	37	316	0	35.1	59	112	108	0.1	161	15
1003	63	42	478	0	18.1	31	24	65	0.1	146	16
1004	57	30	530	0	5.0	64	44	94	0.1	151	17
1005	58	35	498	0	28.5	80	49	119	0.1	138	13
n	5	5	5	5	5	5	5	5	5	5	5
Mean	60	35	430	0	18.3	60	51	96	0.1	145	15
S.D.	3	5	100	0	13.6	18	36	20	0.0	12	1

Animal No.	CRNN mg/dL	Na mmol/L	K mmol/L	Cl mmol/L	Ca mg/dL	P mg/dL	TP g/dL	ALB g/dL
1001	0.26	146	3.6	108	9.9	6.4	5.9	3.2
1002	0.26	144	4.0	108	10.4	5.5	6.3	3.4
1003	0.27	143	4.0	106	10.3	6.0	6.4	3.3
1004	0.30	145	3.9	108	10.1	6.0	6.1	3.2
1005	0.22	145	3.9	106	10.8	6.4	6.8	3.5
n	5	5	5	5	5	5	5	5
Mean	0.26	145	3.9	107	10.3	6.1	6.3	3.3
S.D.	0.03	1	0.2	1	0.3	0.4	0.3	0.1

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 7 - 2 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Blood chemistry Stage : End of administration

Sex : Male Dose : EES 5 mg/kg Species : Rat

Animal No.	AST IU/L	ALT IU/L	ALP IU/L	γ-GTP IU/L	T-BA μmol/L	T-CHO mg/dL	TG mg/dL	PL mg/dL	T-BIL mg/dL	GLU mg/dL	BUN mg/dL
2001	65	44	661	0	34.1	57	25	96	0.1	155	24
2002	61	34	376	0	7.7	56	31	88	0.1	163	17
2003	68	33	380	0	9.2	62	38	93	0.1	160	15
2004	54	31	222	0	10.0	59	98	102	0.1	153	13
2005	64	40	295	0	11.3	56	33	85	0.1	167	17
n	5	5	5	5	5	5	5	5	5	5	5
Mean	62	36	387	0	14.5	58	45	93	0.1	160	17
S.D.	5	5	167	0	11.1	3	30	7	0.0	6	4

Animal No.	CRNN mg/dL	Na mmol/L	K mmol/L	Cl mmol/L	Ca mg/dL	P mg/dL	TP g/dL	ALB g/dL
2001	0.28	142	3.9	106	10.0	5.5	5.9	3.2
2002	0.26	146	3.8	108	10.1	6.0	6.1	3.2
2003	0.30	144	4.1	108	9.9	5.8	5.7	3.1
2004	0.20	145	3.7	107	10.6	5.7	6.5	3.4
2005	0.28	145	3.8	108	9.7	5.9	5.9	3.0
n	5	5	5	5	5	5	5	5
Mean	0.26	144	3.9	107	10.1	5.8	6.0	3.2
S.D.	0.04	2	0.2	1	0.3	0.2	0.3	0.1

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 7 - 3 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Blood chemistry Stage : End of administration

Sex : Male Dose : EES 15 mg/kg Species : Rat

Animal No.	AST IU/L	ALT IU/L	ALP IU/L	γ-GTP IU/L	T-BA μmol/L	T-CHO mg/dL	TG mg/dL	PL mg/dL	T-BIL mg/dL	GLU mg/dL	BUN mg/dL
3001	72	41	337	0	36.6	88	38	131	0.1	140	18
3002	53	33	220	0	14.6	63	57	100	0.1	146	14
3003	60	39	353	0	21.8	65	77	106	0.1	150	15
3004	59	40	432	0	11.2	61	56	93	0.1	171	17
3005	64	46	358	0	5.8	50	33	83	0.1	153	14
n	5	5	5	5	5	5	5	5	5	5	5
Mean	62	40	340	0	18.0	65	52	103	0.1	152	16
S.D.	7	5	76	0	11.9	14	17	18	0.0	12	2

Animal No.	CRNN mg/dL	Na mmol/L	K mmol/L	Cl mmol/L	Ca mg/dL	P mg/dL	TP g/dL	ALB g/dL
3001	0.29	144	3.8	106	10.1	5.9	6.2	3.3
3002	0.28	144	3.7	107	10.2	5.2	6.2	3.3
3003	0.29	143	4.4	106	9.7	6.5	5.9	3.1
3004	0.30	144	4.2	105	10.0	5.5	6.3	3.3
3005	0.28	145	3.8	107	10.6	6.4	6.3	3.4
n	5	5	5	5	5	5	5	5
Mean	0.29	144	4.0	106	10.1	5.9	6.2	3.3
S.D.	0.01	1	0.3	1	0.3	0.6	0.2	0.1

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 7 - 4 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Blood chemistry Stage : End of administration

Sex : Male Dose : EES 50 mg/kg Species : Rat

Animal No.	AST IU/L	ALT IU/L	ALP IU/L	γ-GTP IU/L	T-BA μmol/L	T-CHO mg/dL	TG mg/dL	PL mg/dL	T-BIL mg/dL	GLU mg/dL	BUN mg/dL
4001	77	77	351	0	11.9	59	42	93	0.1	164	18
4002	80	53	361	0	73.4	55	34	90	0.1	171	16
4003	59	43	277	0	9.5	56	48	87	0.1	162	21
4004	86	54	348	0	37.2	53	41	91	0.1	145	20
4005	68	56	269	0	60.8	76	49	117	0.1	159	23
n	5	5	5	5	5	5	5	5	5	5	5
Mean	74	57	321	0	38.6	60	43	96	0.1	160	20
S.D.	11	12	44	0	28.6	9	6	12	0.0	10	3

Animal No.	CRNN mg/dL	Na mmol/L	K mmol/L	Cl mmol/L	Ca mg/dL	P mg/dL	TP g/dL	ALB g/dL
4001	0.33	143	4.0	107	10.4	6.0	6.0	3.2
4002	0.31	143	4.1	105	10.1	5.8	6.0	3.2
4003	0.29	143	3.9	106	10.1	6.2	5.8	3.2
4004	0.29	145	3.6	106	10.1	6.5	5.8	3.2
4005	0.32	145	3.7	106	10.7	5.8	6.7	3.7
n	5	5	5	5	5	5	5	5
Mean	0.31	144	3.9	106	10.3	6.1	6.1	3.3
S.D.	0.02	1	0.2	1	0.3	0.3	0.4	0.2

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 7 - 5 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Blood chemistry Stage : End of lactation (F0 dams)

Sex : Female Dose : EES 0 mg/kg Species : Rat

Animal No.	AST IU/L	ALT IU/L	ALP IU/L	γ-GTP IU/L	T-BA μmol/L	T-CHO mg/dL	TG mg/dL	PL mg/dL	T-BIL mg/dL	GLU mg/dL	BUN mg/dL
1101	112	103	362	1	50.2	99	90	185	0.1	124	31
1102	95	60	338	1	8.3	86	41	157	0.1	132	27
1106	82	72	289	1	17.8	87	133	172	0.0	147	31
1109	78	69	303	1	69.3	104	100	189	0.1	144	30
1110	103	71	313	1	16.5	118	120	208	0.1	126	31
n	5	5	5	5	5	5	5	5	5	5	5
Mean	94	75	321	1	32.4	99	97	182	0.1	135	30
S.D.	14	16	29	0	26.1	13	35	19	0.0	10	2

Animal No.	CRNN mg/dL	Na mmol/L	K mmol/L	Cl mmol/L	Ca mg/dL	P mg/dL	TP g/dL	ALB g/dL
1101	0.38	140	3.9	100	11.1	10.4	6.5	3.3
1102	0.38	140	3.2	102	10.3	9.2	6.6	3.4
1106	0.34	140	3.8	104	10.1	8.5	6.3	3.3
1109	0.35	143	3.9	104	10.5	7.3	6.1	3.2
1110	0.39	137	3.3	98	10.6	9.3	6.8	3.6
n	5	5	5	5	5	5	5	5
Mean	0.37	140	3.6	102	10.5	8.9	6.5	3.4
S.D.	0.02	2	0.3	3	0.4	1.1	0.3	0.2

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 7 - 6 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Blood chemistry Stage : End of lactation (F0 dams)

Sex : Female Dose : EES 5 mg/kg Species : Rat

Animal No.	AST IU/L	ALT IU/L	ALP IU/L	γ-GTP IU/L	T-BA μmol/L	T-CHO mg/dL	TG mg/dL	PL mg/dL	T-BIL mg/dL	GLU mg/dL	BUN mg/dL
2101	142	91	646	1	62.3	101	55	187	0.1	130	32
2104	253	123	485	0	78.4	104	60	196	0.1	128	34
2110	79	84	344	1	22.9	102	183	181	0.1	123	29
2111	91	66	262	0	17.2	99	94	182	0.1	122	16
2112	73	46	300	0	60.0	119	55	202	0.1	156	23
n	5	5	5	5	5	5	5	5	5	5	5
Mean	128	82	407	0	48.2	105	89	190	0.1	132	27
S.D.	75	29	158	1	26.7	8	55	9	0.0	14	7

Animal No.	CRNN mg/dL	Na mmol/L	K mmol/L	Cl mmol/L	Ca mg/dL	P mg/dL	TP g/dL	ALB g/dL
2101	0.34	139	3.5	101	11.8	9.8	7.0	3.6
2104	0.43	138	3.5	99	11.3	10.2	6.9	3.5
2110	0.40	141	3.3	104	10.3	7.7	5.9	3.0
2111	0.28	141	3.5	106	10.1	6.1	6.5	3.4
2112	0.34	141	3.7	101	10.6	7.8	6.4	3.4
n	5	5	5	5	5	5	5	5
Mean	0.36	140	3.5	102	10.8	8.3	6.5	3.4
S.D.	0.06	1	0.1	3	0.7	1.7	0.4	0.2

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 7 - 7 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Blood chemistry Stage : End of lactation (F0 dams)

Sex : Female Dose : EES 15 mg/kg Species : Rat

Animal No.	AST IU/L	ALT IU/L	ALP IU/L	γ-GTP IU/L	T-BA μmol/L	T-CHO mg/dL	TG mg/dL	PL mg/dL	T-BIL mg/dL	GLU mg/dL	BUN mg/dL
3101	108	68	271	1	28.5	100	127	191	0.1	140	27
3106	113	86	340	0	25.9	100	85	181	0.1	137	30
3107	77	69	794	0	13.5	83	94	181	0.0	136	27
3109	89	65	231	0	13.9	97	92	174	0.1	134	25
3111	111	73	237	1	12.3	95	117	161	0.1	138	28
n	5	5	5	5	5	5	5	5	5	5	5
Mean	100	72	375	0	18.8	95	103	178	0.1	137	27
S.D.	16	8	238	1	7.7	7	18	11	0.0	2	2

Animal No.	CRNN mg/dL	Na mmol/L	K mmol/L	Cl mmol/L	Ca mg/dL	P mg/dL	TP g/dL	ALB g/dL
3101	0.36	139	4.0	103	11.2	10.4	6.7	3.6
3106	0.39	141	3.7	102	10.2	9.4	6.3	3.3
3107	0.32	140	3.0	98	10.6	7.0	7.2	4.0
3109	0.33	144	3.1	103	10.9	8.0	6.5	3.5
3111	0.45	140	3.6	102	10.4	7.4	6.3	3.1
n	5	5	5	5	5	5	5	5
Mean	0.37	141	3.5	102	10.7	8.4	6.6	3.5
S.D.	0.05	2	0.4	2	0.4	1.4	0.4	0.3

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 7 - 8 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Blood chemistry Stage : End of lactation (F0 dams)

Sex : Female Dose : EES 50 mg/kg Species : Rat

Animal No.	AST IU/L	ALT IU/L	ALP IU/L	γ-GTP IU/L	T-BA μmol/L	T-CHO mg/dL	TG mg/dL	PL mg/dL	T-BIL mg/dL	GLU mg/dL	BUN mg/dL
4103	120	74	240	1	29.2	111	84	205	0.1	116	23
4105	93	91	307	0	30.4	102	150	203	0.1	125	28
4106	98	85	265	0	18.1	82	97	157	0.1	123	22
4108	185	107	372	0	36.8	114	125	235	0.1	126	23
4112	95	97	257	1	65.6	96	100	177	0.1	116	48
n	5	5	5	5	5	5	5	5	5	5	5
Mean	118	91	288	0	36.0	101	111	195	0.1	121	29
S.D.	39	12	53	1	17.9	13	26	30	0.0	5	11

Animal No.	CRNN mg/dL	Na mmol/L	K mmol/L	Cl mmol/L	Ca mg/dL	P mg/dL	TP g/dL	ALB g/dL
4103	0.37	141	2.9	102	10.8	8.4	6.5	3.6
4105	0.34	139	3.8	101	11.1	10.4	6.8	3.8
4106	0.36	141	3.2	104	10.3	7.6	6.2	3.3
4108	0.36	141	3.3	101	12.1	10.7	7.2	3.8
4112	0.52	140	3.6	104	10.9	11.3	5.7	3.0
n	5	5	5	5	5	5	5	5
Mean	0.39	140	3.4	102	11.0	9.7	6.5	3.5
S.D.	0.07	1	0.4	2	0.7	1.6	0.6	0.3

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 7 - 9 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Blood chemistry Stage : End of administration (non-mating group)

Sex : Female Dose : EES 0 mg/kg Species : Rat

Animal No.	AST IU/L	ALT IU/L	ALP IU/L	γ-GTP IU/L	T-BA μmol/L	T-CHO mg/dL	TG mg/dL	PL mg/dL	T-BIL mg/dL	GLU mg/dL	BUN mg/dL
5101	64	32	161	0	22.6	58	4	103	0.1	118	20
5102	56	25	162	1	9.6	62	19	127	0.1	139	16
5103	79	53	200	0	16.3	79	43	163	0.1	139	14
5104	63	38	194	0	19.6	76	19	159	0.1	137	16
5105	58	38	196	0	12.9	61	31	140	0.1	127	16
n	5	5	5	5	5	5	5	5	5	5	5
Mean	64	37	183	0	16.2	67	23	138	0.1	132	16
S.D.	9	10	19	0	5.2	10	15	25	0.0	9	2

Animal No.	CRNN mg/dL	Na mmol/L	K mmol/L	Cl mmol/L	Ca mg/dL	P mg/dL	TP g/dL	ALB g/dL
5101	0.41	143	3.7	109	9.8	3.6	6.4	3.6
5102	0.38	142	3.6	111	9.9	3.5	6.5	3.5
5103	0.32	143	3.4	106	10.6	4.4	7.1	4.0
5104	0.35	142	3.5	108	10.5	3.2	7.4	4.3
5105	0.33	143	3.5	109	10.2	3.8	6.9	4.2
n	5	5	5	5	5	5	5	5
Mean	0.36	143	3.5	109	10.2	3.7	6.9	3.9
S.D.	0.04	1	0.1	2	0.4	0.4	0.4	0.4

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 7 - 10 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Blood chemistry Stage : End of administration (non-mating group)

Sex : Female Dose : EES 50 mg/kg Species : Rat

Animal No.	AST IU/L	ALT IU/L	ALP IU/L	γ-GTP IU/L	T-BA μmol/L	T-CHO mg/dL	TG mg/dL	PL mg/dL	T-BIL mg/dL	GLU mg/dL	BUN mg/dL
6101	80	46	162	0	20.3	57	21	120	0.1	144	15
6102	65	46	274	0	19.0	63	34	124	0.1	119	16
6103	83	48	161	0	23.6	62	17	130	0.1	120	17
6104	64	39	123	0	22.5	62	15	128	0.1	121	19
6105	59	45	142	0	12.0	79	17	156	0.1	122	20
n	5	5	5	5	5	5	5	5	5	5	5
Mean	70	45	172	0	19.5	65	21	132	0.1	125	17
S.D.	11	3	59	0	4.6	8	8	14	0.0	11	2

Animal No.	CRNN mg/dL	Na mmol/L	K mmol/L	Cl mmol/L	Ca mg/dL	P mg/dL	TP g/dL	ALB g/dL
6101	0.39	143	3.4	111	9.9	4.2	6.5	3.8
6102	0.34	143	3.5	110	10.4	4.0	6.5	3.6
6103	0.44	143	3.3	108	9.9	3.3	6.4	3.7
6104	0.37	142	3.7	109	10.2	4.2	6.6	3.7
6105	0.36	144	3.1	109	10.4	4.2	6.9	4.2
n	5	5	5	5	5	5	5	5
Mean	0.38	143	3.4	109	10.2	4.0	6.6	3.8
S.D.	0.04	1	0.2	1	0.3	0.4	0.2	0.2

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 7 - 11 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Blood chemistry Stage : End of recovery

Sex : Male Dose : EES 0 mg/kg Species : Rat

Animal No.	AST IU/L	ALT IU/L	ALP IU/L	γ-GTP IU/L	T-BA μmol/L	T-CHO mg/dL	TG mg/dL	PL mg/dL	T-BIL mg/dL	GLU mg/dL	BUN mg/dL
1008	64	39	424	0	60.6	58	19	86	0.1	125	23
1009	57	30	265	0	23.3	65	58	108	0.1	147	19
1010	58	27	266	0	35.1	79	37	112	0.1	139	18
1011	69	47	400	0	10.3	59	37	92	0.1	142	22
1012	66	34	320	0	44.2	66	59	98	0.1	126	20
n	5	5	5	5	5	5	5	5	5	5	5
Mean	63	35	335	0	34.7	65	42	99	0.1	136	20
S.D.	5	8	74	0	19.3	8	17	11	0.0	10	2

Animal No.	CRNN mg/dL	Na mmol/L	K mmol/L	Cl mmol/L	Ca mg/dL	P mg/dL	TP g/dL	ALB g/dL
1008	0.35	143	3.7	105	10.1	5.4	6.1	3.1
1009	0.26	144	3.6	106	10.5	5.2	6.6	3.3
1010	0.23	145	3.8	106	10.6	5.9	6.6	3.3
1011	0.31	144	4.1	109	10.3	5.8	6.1	3.1
1012	0.27	144	3.4	104	10.8	5.7	6.7	3.4
n	5	5	5	5	5	5	5	5
Mean	0.28	144	3.7	106	10.5	5.6	6.4	3.2
S.D.	0.05	1	0.3	2	0.3	0.3	0.3	0.1

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 7 - 12 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Blood chemistry Stage : End of recovery

Sex : Male Dose : EES 50 mg/kg Species : Rat

Animal No.	AST IU/L	ALT IU/L	ALP IU/L	γ-GTP IU/L	T-BA μmol/L	T-CHO mg/dL	TG mg/dL	PL mg/dL	T-BIL mg/dL	GLU mg/dL	BUN mg/dL
4008	52	28	233	0	5.1	63	89	102	0.1	177	15
4009	60	37	346	0	9.3	61	64	101	0.1	126	18
4010	58	37	507	0	8.1	73	55	105	0.1	154	15
4011	62	35	367	0	22.9	71	57	112	0.1	122	21
4012	50	35	390	0	8.3	49	73	93	0.1	176	18
n	5	5	5	5	5	5	5	5	5	5	5
Mean	56	34	369	0	10.7	63	68	103	0.1	151	17
S.D.	5	4	98	0	7.0	10	14	7	0.0	26	3

Animal No.	CRNN mg/dL	Na mmol/L	K mmol/L	Cl mmol/L	Ca mg/dL	P mg/dL	TP g/dL	ALB g/dL
4008	0.29	143	4.0	106	10.3	5.5	6.3	3.3
4009	0.34	144	3.7	107	10.3	5.9	6.1	3.1
4010	0.25	144	3.9	106	9.9	5.7	6.0	3.2
4011	0.28	145	3.6	106	9.9	5.1	6.4	3.5
4012	0.26	144	3.5	107	10.2	5.3	6.7	3.4
n	5	5	5	5	5	5	5	5
Mean	0.28	144	3.7	106	10.1	5.5	6.3	3.3
S.D.	0.04	1	0.2	1	0.2	0.3	0.3	0.2

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 7 - 13 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Blood chemistry Stage : End of recovery (non-mating group)

Sex : Female Dose : EES 0 mg/kg Species : Rat

Animal No.	AST IU/L	ALT IU/L	ALP IU/L	γ-GTP IU/L	T-BA μmol/L	T-CHO mg/dL	TG mg/dL	PL mg/dL	T-BIL mg/dL	GLU mg/dL	BUN mg/dL
5106	61	36	190	0	7.4	58	30	113	0.1	133	19
5107	59	43	162	0	12.2	71	30	129	0.1	131	20
5108	49	27	174	0	6.2	77	21	136	0.1	139	17
5109	47	30	158	0	22.1	82	59	164	0.1	125	17
5110	62	41	250	0	12.6	72	17	135	0.1	100	20
n	5	5	5	5	5	5	5	5	5	5	5
Mean	56	35	187	0	12.1	72	31	135	0.1	126	19
S.D.	7	7	37	0	6.3	9	16	18	0.0	15	2

Animal No.	CRNN mg/dL	Na mmol/L	K mmol/L	Cl mmol/L	Ca mg/dL	P mg/dL	TP g/dL	ALB g/dL
5106	0.37	141	3.4	107	10.5	4.4	6.4	3.8
5107	0.34	141	3.6	107	10.1	4.7	6.6	3.7
5108	0.37	142	3.8	108	10.3	3.3	6.9	3.8
5109	0.31	142	3.5	107	10.5	3.1	6.8	4.0
5110	0.34	142	3.6	108	10.2	4.7	6.6	3.4
n	5	5	5	5	5	5	5	5
Mean	0.35	142	3.6	107	10.3	4.0	6.7	3.7
S.D.	0.03	1	0.1	1	0.2	0.8	0.2	0.2

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 7 - 14 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Blood chemistry Stage : End of recovery (non-mating group)

Sex : Female Dose : EES 50 mg/kg Species : Rat

Animal No.	AST IU/L	ALT IU/L	ALP IU/L	γ-GTP IU/L	T-BA μmol/L	T-CHO mg/dL	TG mg/dL	PL mg/dL	T-BIL mg/dL	GLU mg/dL	BUN mg/dL
6106	50	24	117	0	20.6	67	31	127	0.1	100	16
6107	50	30	133	0	18.5	43	30	96	0.1	121	19
6108	62	34	129	0	7.6	73	39	150	0.1	118	18
6109	51	24	140	0	6.7	88	58	166	0.1	132	19
6110	68	28	217	0	20.6	74	18	140	0.1	133	18
n	5	5	5	5	5	5	5	5	5	5	5
Mean	56	28	147	0	14.8	69	35	136	0.1	121	18
S.D.	8	4	40	0	7.0	16	15	26	0.0	13	1

Animal No.	CRNN mg/dL	Na mmol/L	K mmol/L	Cl mmol/L	Ca mg/dL	P mg/dL	TP g/dL	ALB g/dL
6106	0.35	141	3.6	106	10.4	5.3	6.8	3.9
6107	0.35	140	3.7	108	10.3	5.0	6.6	3.7
6108	0.41	143	3.6	108	10.3	3.3	6.9	3.9
6109	0.38	141	3.6	105	10.4	4.2	6.9	4.1
6110	0.35	142	3.7	108	10.0	5.0	6.3	3.5
n	5	5	5	5	5	5	5	5
Mean	0.37	141	3.6	107	10.3	4.6	6.7	3.8
S.D.	0.03	1	0.1	1	0.2	0.8	0.3	0.2

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 8 - 1 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Organ weight Stage : End of administration

Sex : Male Dose : EES 0 mg/kg Species : Rat

	Body weight	Brain		Thyroid-R		Thyroid-L		Thyroid-RL	
		AB	RE	AB	RE	AB	RE	AB	RE
Animal No.	g	g	g/100g	mg	mg/100g	mg	mg/100g	mg	mg/100g
1001	481	2.09	0.43	10.0	2.1	10.2	2.1	20.2	4.2
1002	507	2.16	0.43	15.3	3.0	12.9	2.5	28.2	5.6
1003	516	2.12	0.41	13.1	2.5	10.5	2.0	23.6	4.6
1004	538	2.32	0.43	13.6	2.5	11.8	2.2	25.4	4.7
1005	546	2.21	0.40	10.2	1.9	12.9	2.4	23.1	4.2
1006	489	2.09	0.43	10.2	2.1	10.6	2.2	20.8	4.3
1007	562	2.20	0.39	14.6	2.6	16.8	3.0	31.4	5.6
n	7	7	7	7	7	7	7	7	7
Mean	520	2.17	0.42	12.4	2.4	12.2	2.3	24.7	4.7
S.D.	30	0.08	0.02	2.3	0.4	2.3	0.3	4.0	0.6

	Adrenal-R		Adrenal-L		Adrenal-RL		Thymus		Spleen	
	AB	RE	AB	RE	AB	RE	AB	RE	AB	RE
Animal No.	mg	mg/100g	mg	mg/100g	mg	mg/100g	mg	mg/100g	g	g/100g
1001	30	6	31	6	61	13	250	52	0.68	0.14
1002	27	5	30	6	57	11	361	71	0.65	0.13
1003	33	6	33	6	66	13	471	91	0.72	0.14
1004	33	6	34	6	67	12	410	76	0.83	0.15
1005	25	5	28	5	53	10	418	77	0.78	0.14
1006	31	6	29	6	60	12	358	73	0.82	0.17
1007	29	5	32	6	61	11	306	54	0.77	0.14
n	7	7	7	7	7	7	7	7	7	7
Mean	30	6	31	6	61	12	368	71	0.75	0.14
S.D.	3	1	2	0	5	1	74	14	0.07	0.01

	Heart		Liver		Kidney-R		Kidney-L		Kidney-RL	
	AB	RE	AB	RE	AB	RE	AB	RE	AB	RE
Animal No.	g	g/100g	g	g/100g	g	g/100g	g	g/100g	g	g/100g
1001	1.56	0.32	11.74	2.44	1.44	0.30	1.62	0.34	3.06	0.64
1002	1.66	0.33	13.71	2.70	1.69	0.33	1.80	0.36	3.49	0.69
1003	1.52	0.29	11.64	2.26	1.71	0.33	1.75	0.34	3.46	0.67
1004	1.44	0.27	13.83	2.57	1.51	0.28	1.65	0.31	3.16	0.59
1005	1.61	0.29	15.39	2.82	1.93	0.35	2.20	0.40	4.13	0.76
1006	1.30	0.27	12.55	2.57	1.65	0.34	1.81	0.37	3.46	0.71
1007	1.49	0.27	14.09	2.51	1.69	0.30	1.66	0.30	3.35	0.60
n	7	7	7	7	7	7	7	7	7	7
Mean	1.51	0.29	13.28	2.55	1.66	0.32	1.78	0.35	3.44	0.67
S.D.	0.12	0.02	1.37	0.18	0.16	0.03	0.20	0.03	0.34	0.06

AB : Absolute weight, RE : Relative weight by body weight

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 8 - 2 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Organ weight Stage : End of administration

Sex : Male Dose : EES 0 mg/kg Species : Rat

	Testis-R		Testis-L		Testis-RL		Epididymis-R		Epididymis-L	
	AB	RE	AB	RE	AB	RE	AB	RE	AB	RE
Animal No.	g	g/100g	g	g/100g	g	g/100g	mg	mg/100g	mg	mg/100g
1001	1.71	0.36	1.75	0.36	3.46	0.72	666	138	624	130
1002	1.78	0.35	1.78	0.35	3.56	0.70	636	125	652	129
1003	1.53	0.30	1.57	0.30	3.10	0.60	689	134	644	125
1004	1.84	0.34	1.76	0.33	3.60	0.67	703	131	630	117
1005	1.80	0.33	1.82	0.33	3.62	0.66	748	137	716	131
1006	1.58	0.32	1.66	0.34	3.24	0.66	732	150	720	147
1007	1.93	0.34	1.93	0.34	3.86	0.69	740	132	732	130
n	7	7	7	7	7	7	7	7	7	7
Mean	1.74	0.33	1.75	0.34	3.49	0.67	702	135	674	130
S.D.	0.14	0.02	0.11	0.02	0.25	0.04	41	8	47	9

	Epididymis-RL		Prostate		Seminal vesicle		LABC		Cowper's gland-R	
	AB	RE	AB	RE	AB	RE	AB	RE	AB	RE
Animal No.	mg	mg/100g	g	g/100g	g	g/100g	g	g/100g	mg	mg/100g
1001	1290	268	1.54	0.32	1.90	0.40	1.54	0.32	70.6	14.7
1002	1288	254	1.13	0.22	1.15	0.23	1.26	0.25	61.7	12.2
1003	1333	258	1.64	0.32	1.63	0.32	1.78	0.34	81.6	15.8
1004	1333	248	1.24	0.23	1.68	0.31	1.53	0.28	66.0	12.3
1005	1464	268	1.14	0.21	1.77	0.32	1.76	0.32	63.7	11.7
1006	1452	297	1.21	0.25	1.89	0.39	1.44	0.29	56.7	11.6
1007	1472	262	1.45	0.26	1.53	0.27	1.72	0.31	67.3	12.0
n	7	7	7	7	7	7	7	7	7	7
Mean	1376	265	1.34	0.26	1.65	0.32	1.58	0.30	66.8	12.9
S.D.	83	16	0.21	0.05	0.26	0.06	0.19	0.03	7.9	1.7

	Cowper's gland-L		Cowper's gland-RL		Glans penis	
	AB	RE	AB	RE	AB	RE
Animal No.	mg	mg/100g	mg	mg/100g	mg	mg/100g
1001	62.8	13.1	133.4	27.7	102.8	21.4
1002	41.1	8.1	102.8	20.3	93.2	18.4
1003	70.2	13.6	151.8	29.4	126.8	24.6
1004	73.8	13.7	139.8	26.0	123.5	23.0
1005	68.5	12.5	132.2	24.2	116.1	21.3
1006	40.3	8.2	97.0	19.8	91.2	18.7
1007	70.0	12.5	137.3	24.4	103.9	18.5
n	7	7	7	7	7	7
Mean	61.0	11.7	127.8	24.5	108.2	20.8
S.D.	14.2	2.5	20.1	3.6	14.2	2.4

AB : Absolute weight, RE : Relative weight by body weight

LABC: Levator ani and bulbocavernosus muscle

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 8 - 3 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Organ weight Stage : End of administration

Sex : Male Dose : EES 5 mg/kg Species : Rat

	Body weight	Brain		Thyroid-R		Thyroid-L		Thyroid-RL	
		AB	RE	AB	RE	AB	RE	AB	RE
Animal No.	g	g	g/100g	mg	mg/100g	mg	mg/100g	mg	mg/100g
2001	503	2.20	0.44	11.5	2.3	12.0	2.4	23.5	4.7
2002	508	2.19	0.43	14.9	2.9	14.8	2.9	29.7	5.8
2003	524	2.27	0.43	10.7	2.0	11.8	2.3	22.5	4.3
2004	497	2.21	0.44	10.8	2.2	10.5	2.1	21.3	4.3
2005	532	2.16	0.41	9.3	1.7	12.4	2.3	21.7	4.1
2006	467	2.00	0.43	8.2	1.8	6.5	1.4	14.7	3.1
2007	564	2.01	0.36	14.1	2.5	8.5	1.5	22.6	4.0
2008	508	2.22	0.44	10.5	2.1	11.6	2.3	22.1	4.4
2009	504	2.24	0.44	11.4	2.3	14.2	2.8	25.6	5.1
2010	515	2.16	0.42	13.9	2.7	12.8	2.5	26.7	5.2
2011	539	2.07	0.38	10.7	2.0	8.8	1.6	19.5	3.6
2012	532	2.10	0.39	16.8	3.2	18.9	3.6	35.7	6.7
n	12	12	12	12	12	12	12	12	12
Mean	516	2.15	0.42	11.9	2.3	11.9	2.3	23.8	4.6
S.D.	25	0.09	0.03	2.5	0.4	3.2	0.6	5.3	1.0

	Adrenal-R		Adrenal-L		Adrenal-RL		Thymus		Spleen	
	AB	RE	AB	RE	AB	RE	AB	RE	AB	RE
Animal No.	mg	mg/100g	mg	mg/100g	mg	mg/100g	mg	mg/100g	g	g/100g
2001	24	5	26	5	50	10	332	66	0.79	0.16
2002	35	7	40	8	75	15	352	69	0.85	0.17
2003	25	5	33	6	58	11	304	58	0.72	0.14
2004	29	6	33	7	62	12	480	97	0.86	0.17
2005	36	7	37	7	73	14	299	56	0.74	0.14
2006	23	5	25	5	48	10	470	101	0.69	0.15
2007	30	5	36	6	66	12	366	65	0.84	0.15
2008	31	6	30	6	61	12	378	74	0.81	0.16
2009	29	6	32	6	61	12	500	99	0.66	0.13
2010	23	4	27	5	50	10	229	44	0.65	0.13
2011	28	5	31	6	59	11	228	42	0.61	0.11
2012	34	6	33	6	67	13	343	64	0.96	0.18
n	12	12	12	12	12	12	12	12	12	12
Mean	29	6	32	6	61	12	357	70	0.77	0.15
S.D.	5	1	5	1	9	2	90	20	0.10	0.02

AB : Absolute weight, RE : Relative weight by body weight

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 8 - 4 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Organ weight Stage : End of administration

Sex : Male Dose : EES 5 mg/kg Species : Rat

	Heart		Liver		Kidney-R		Kidney-L		Kidney-RL	
	AB	RE	AB	RE	AB	RE	AB	RE	AB	RE
Animal No.	g	g/100g	g	g/100g	g	g/100g	g	g/100g	g	g/100g
2001	1.50	0.30	13.11	2.61	1.75	0.35	1.79	0.36	3.54	0.70
2002	1.86	0.37	13.22	2.60	1.68	0.33	1.93	0.38	3.61	0.71
2003	1.54	0.29	12.42	2.37	1.66	0.32	1.88	0.36	3.54	0.68
2004	1.51	0.30	14.43	2.90	1.71	0.34	1.87	0.38	3.58	0.72
2005	1.53	0.29	12.87	2.42	2.01	0.38	2.32	0.44	4.33	0.81
2006	1.33	0.28	11.22	2.40	1.42	0.30	1.44	0.31	2.86	0.61
2007	1.63	0.29	14.38	2.55	1.95	0.35	1.76	0.31	3.71	0.66
2008	1.48	0.29	12.16	2.39	1.55	0.31	1.68	0.33	3.23	0.64
2009	1.44	0.29	11.57	2.30	1.61	0.32	1.69	0.34	3.30	0.65
2010	1.76	0.34	12.34	2.40	1.76	0.34	1.93	0.37	3.69	0.72
2011	1.50	0.28	12.33	2.29	1.79	0.33	1.75	0.32	3.54	0.66
2012	1.50	0.28	14.17	2.66	1.73	0.33	1.74	0.33	3.47	0.65
n	12	12	12	12	12	12	12	12	12	12
Mean	1.55	0.30	12.85	2.49	1.72	0.33	1.82	0.35	3.53	0.68
S.D.	0.14	0.03	1.06	0.18	0.16	0.02	0.21	0.04	0.34	0.05

	Testis-R		Testis-L		Testis-RL		Epididymis-R		Epididymis-L	
	AB	RE	AB	RE	AB	RE	AB	RE	AB	RE
Animal No.	g	g/100g	g	g/100g	g	g/100g	mg	mg/100g	mg	mg/100g
2001	1.71	0.34	1.68	0.33	3.39	0.67	628	125	560	111
2002	1.83	0.36	1.81	0.36	3.64	0.72	603	119	624	123
2003	1.80	0.34	1.83	0.35	3.63	0.69	695	133	695	133
2004	1.71	0.34	1.80	0.36	3.51	0.71	683	137	702	141
2005	1.74	0.33	1.78	0.33	3.52	0.66	621	117	673	127
2006	1.69	0.36	1.73	0.37	3.42	0.73	616	132	660	141
2007	1.80	0.32	1.74	0.31	3.54	0.63	703	125	677	120
2008	1.82	0.36	1.78	0.35	3.60	0.71	701	138	696	137
2009	1.70	0.34	1.72	0.34	3.42	0.68	605	120	613	122
2010	1.72	0.33	1.74	0.34	3.46	0.67	769	149	774	150
2011	1.50	0.28	1.49	0.28	2.99	0.55	725	135	638	118
2012	1.51	0.28	1.54	0.29	3.05	0.57	785	148	771	145
n	12	12	12	12	12	12	12	12	12	12
Mean	1.71	0.33	1.72	0.33	3.43	0.67	678	132	674	131
S.D.	0.11	0.03	0.11	0.03	0.21	0.06	63	11	62	12

AB : Absolute weight, RE : Relative weight by body weight

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 8 - 5 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Organ weight Stage : End of administration

Sex : Male Dose : EES 5 mg/kg Species : Rat

	Epididymis-RL		Prostate		Seminal vesicle		LABC		Cowper's gland-R	
	AB	RE	AB	RE	AB	RE	AB	RE	AB	RE
Animal No.	mg	mg/100g	g	g/100g	g	g/100g	g	g/100g	mg	mg/100g
2001	1188	236	1.09	0.22	1.25	0.25	1.90	0.38	83.3	16.6
2002	1227	242	1.16	0.23	1.97	0.39	1.48	0.29	47.0	9.3
2003	1390	265	1.44	0.27	1.80	0.34	1.67	0.32	72.6	13.9
2004	1385	279	1.52	0.31	1.28	0.26	1.58	0.32	77.8	15.7
2005	1294	243	1.00	0.19	2.35	0.44	1.59	0.30	83.8	15.8
2006	1276	273	1.08	0.23	1.51	0.32	1.37	0.29	83.0	17.8
2007	1380	245	1.22	0.22	1.88	0.33	1.68	0.30	67.8	12.0
2008	1397	275	1.51	0.30	1.62	0.32	1.34	0.26	52.3	10.3
2009	1218	242	1.20	0.24	1.26	0.25	1.53	0.30	64.2	12.7
2010	1543	300	1.46	0.28	1.85	0.36	1.72	0.33	81.2	15.8
2011	1363	253	1.16	0.22	1.33	0.25	1.61	0.30	59.4	11.0
2012	1556	292	1.47	0.28	1.76	0.33	1.36	0.26	88.6	16.7
n	12	12	12	12	12	12	12	12	12	12
Mean	1351	262	1.28	0.25	1.66	0.32	1.57	0.30	71.8	14.0
S.D.	118	22	0.19	0.04	0.34	0.06	0.17	0.03	13.6	2.8

	Cowper's gland-L		Cowper's gland-RL		Glans penis	
	AB	RE	AB	RE	AB	RE
Animal No.	mg	mg/100g	mg	mg/100g	mg	mg/100g
2001	71.7	14.3	155.0	30.8	128.9	25.6
2002	61.1	12.0	108.1	21.3	97.8	19.3
2003	70.1	13.4	142.7	27.2	101.4	19.4
2004	66.0	13.3	143.8	28.9	116.7	23.5
2005	94.9	17.8	178.7	33.6	111.1	20.9
2006	72.8	15.6	155.8	33.4	107.8	23.1
2007	71.5	12.7	139.3	24.7	141.5	25.1
2008	74.6	14.7	126.9	25.0	121.2	23.9
2009	68.3	13.6	132.5	26.3	102.2	20.3
2010	83.8	16.3	165.0	32.0	102.2	19.8
2011	59.8	11.1	119.2	22.1	122.7	22.8
2012	69.6	13.1	158.2	29.7	97.3	18.3
n	12	12	12	12	12	12
Mean	72.0	14.0	143.8	27.9	112.6	21.8
S.D.	9.5	1.9	20.1	4.2	13.9	2.5

AB : Absolute weight, RE : Relative weight by body weight

LABC: Levator ani and bulbocavernosus muscle

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 8 - 6 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Organ weight Stage : End of administration

Sex : Male Dose : EES 15 mg/kg Species : Rat

	Body weight	Brain		Thyroid-R		Thyroid-L		Thyroid-RL	
		AB	RE	AB	RE	AB	RE	AB	RE
Animal No.	g	g	g/100g	mg	mg/100g	mg	mg/100g	mg	mg/100g
3001	504	2.24	0.44	13.0	2.6	15.7	3.1	28.7	5.7
3002	488	2.08	0.43	10.7	2.2	10.4	2.1	21.1	4.3
3003	506	2.22	0.44	15.7	3.1	11.0	2.2	26.7	5.3
3004	526	2.34	0.44	13.2	2.5	12.1	2.3	25.3	4.8
3005	516	2.24	0.43	13.5	2.6	12.7	2.5	26.2	5.1
3006	524	2.38	0.45	12.9	2.5	11.5	2.2	24.4	4.7
3007	590	2.33	0.39	20.5	3.5	17.1	2.9	37.6	6.4
3008	490	2.11	0.43	15.8	3.2	16.0	3.3	31.8	6.5
3009	533	2.23	0.42	10.1	1.9	10.1	1.9	20.2	3.8
3010	531	2.14	0.40	11.7	2.2	10.3	1.9	22.0	4.1
3011	572	2.02	0.35	15.2	2.7	13.5	2.4	28.7	5.0
3012	566	2.20	0.39	15.3	2.7	13.4	2.4	28.7	5.1
n	12	12	12	12	12	12	12	12	12
Mean	529	2.21	0.42	14.0	2.6	12.8	2.4	26.8	5.1
S.D.	32	0.11	0.03	2.8	0.5	2.4	0.4	4.9	0.8

	Adrenal-R		Adrenal-L		Adrenal-RL		Thymus		Spleen	
	AB	RE	AB	RE	AB	RE	AB	RE	AB	RE
Animal No.	mg	mg/100g	mg	mg/100g	mg	mg/100g	mg	mg/100g	g	g/100g
3001	31	6	36	7	67	13	330	65	0.73	0.14
3002	21	4	20	4	41	8	285	58	1.01	0.21
3003	31	6	34	7	65	13	205	41	0.65	0.13
3004	34	6	37	7	71	13	298	57	0.72	0.14
3005	36	7	36	7	72	14	336	65	0.90	0.17
3006	33	6	36	7	69	13	515	98	1.10	0.21
3007	25	4	27	5	52	9	308	52	0.81	0.14
3008	29	6	29	6	58	12	248	51	0.84	0.17
3009	30	6	36	7	66	12	431	81	0.87	0.16
3010	26	5	34	6	60	11	278	52	0.84	0.16
3011	30	5	34	6	64	11	410	72	0.88	0.15
3012	34	6	34	6	68	12	320	57	0.84	0.15
n	12	12	12	12	12	12	12	12	12	12
Mean	30	6	33	6	63	12	330	62	0.85	0.16
S.D.	4	1	5	1	9	2	85	15	0.12	0.03

AB : Absolute weight, RE : Relative weight by body weight

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 8 - 7 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Organ weight Stage : End of administration

Sex : Male Dose : EES 15 mg/kg Species : Rat

	Heart		Liver		Kidney-R		Kidney-L		Kidney-RL	
	AB	RE	AB	RE	AB	RE	AB	RE	AB	RE
Animal No.	g	g/100g	g	g/100g	g	g/100g	g	g/100g	g	g/100g
3001	1.82	0.36	13.99	2.78	1.61	0.32	1.78	0.35	3.39	0.67
3002	1.47	0.30	12.87	2.64	1.61	0.33	1.79	0.37	3.40	0.70
3003	1.39	0.27	12.50	2.47	1.55	0.31	1.83	0.36	3.38	0.67
3004	1.44	0.27	12.32	2.34	1.64	0.31	1.94	0.37	3.58	0.68
3005	1.53	0.30	12.69	2.46	1.58	0.31	1.86	0.36	3.44	0.67
3006	1.51	0.29	13.68	2.61	1.88	0.36	1.79	0.34	3.67	0.70
3007	1.70	0.29	16.74	2.84	1.89	0.32	1.92	0.33	3.81	0.65
3008	1.32	0.27	12.57	2.57	1.58	0.32	1.60	0.33	3.18	0.65
3009	1.44	0.27	12.80	2.40	1.68	0.32	1.76	0.33	3.44	0.65
3010	1.68	0.32	13.48	2.54	1.80	0.34	1.87	0.35	3.67	0.69
3011	1.51	0.26	15.58	2.72	1.63	0.28	1.59	0.28	3.22	0.56
3012	1.57	0.28	13.96	2.47	1.85	0.33	1.85	0.33	3.70	0.65
n	12	12	12	12	12	12	12	12	12	12
Mean	1.53	0.29	13.60	2.57	1.69	0.32	1.80	0.34	3.49	0.66
S.D.	0.14	0.03	1.35	0.15	0.13	0.02	0.11	0.02	0.20	0.04

	Testis-R		Testis-L		Testis-RL		Epididymis-R		Epididymis-L	
	AB	RE	AB	RE	AB	RE	AB	RE	AB	RE
Animal No.	g	g/100g	g	g/100g	g	g/100g	mg	mg/100g	mg	mg/100g
3001	1.63	0.32	1.65	0.33	3.28	0.65	633	126	635	126
3002	1.87	0.38	1.92	0.39	3.79	0.78	657	135	661	135
3003	1.83	0.36	1.82	0.36	3.65	0.72	752	149	725	143
3004	1.71	0.33	1.72	0.33	3.43	0.65	658	125	669	127
3005	1.90	0.37	1.88	0.36	3.78	0.73	850	165	817	158
3006	1.81	0.35	1.83	0.35	3.64	0.69	720	137	732	140
3007	2.00	0.34	2.06	0.35	4.06	0.69	688	117	686	116
3008	1.40	0.29	1.41	0.29	2.81	0.57	688	140	641	131
3009	1.64	0.31	1.65	0.31	3.29	0.62	650	122	664	125
3010	1.48	0.28	1.49	0.28	2.97	0.56	704	133	697	131
3011	0.94	0.16	1.69	0.30	2.63	0.46	MV	:::	687	120
3012	1.64	0.29	1.63	0.29	3.27	0.58	654	116	627	111
n	12	12	12	12	12	12	11	11	12	12
Mean	1.65	0.32	1.73	0.33	3.38	0.64	696	133	687	130
S.D.	0.28	0.06	0.18	0.03	0.43	0.09	62	15	53	13

AB : Absolute weight, RE : Relative weight by body weight

MV : Missing Value

::: : Impossible to calculate

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 8 - 8 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Organ weight Stage : End of administration

Sex : Male Dose : EES 15 mg/kg Species : Rat

	Epididymis-RL		Prostate		Seminal vesicle		LABC		Cowper's gland-R	
	AB	RE	AB	RE	AB	RE	AB	RE	AB	RE
Animal No.	mg	mg/100g	g	g/100g	g	g/100g	g	g/100g	mg	mg/100g
3001	1268	252	1.47	0.29	2.27	0.45	1.83	0.36	77.1	15.3
3002	1318	270	1.18	0.24	1.51	0.31	1.50	0.31	51.7	10.6
3003	1477	292	1.30	0.26	1.84	0.36	1.56	0.31	62.5	12.4
3004	1327	252	1.49	0.28	1.78	0.34	1.77	0.34	69.8	13.3
3005	1667	323	1.72	0.33	2.38	0.46	1.78	0.34	78.0	15.1
3006	1452	277	1.26	0.24	1.50	0.29	1.63	0.31	64.7	12.3
3007	1374	233	1.63	0.28	1.60	0.27	1.56	0.26	76.3	12.9
3008	1329	271	1.60	0.33	1.52	0.31	1.63	0.33	80.9	16.5
3009	1314	247	1.24	0.23	1.61	0.30	1.61	0.30	47.5	8.9
3010	1401	264	1.48	0.28	1.80	0.34	1.49	0.28	47.8	9.0
3011	:::	:::	1.33	0.23	1.64	0.29	1.47	0.26	64.8	11.3
3012	1281	226	1.78	0.31	1.91	0.34	1.89	0.33	83.5	14.8
n	11	11	12	12	12	12	12	12	12	12
Mean	1383	264	1.46	0.28	1.78	0.34	1.64	0.31	67.1	12.7
S.D.	115	27	0.20	0.04	0.29	0.06	0.14	0.03	12.8	2.5

	Cowper's gland-L		Cowper's gland-RL		Glans penis	
	AB	RE	AB	RE	AB	RE
Animal No.	mg	mg/100g	mg	mg/100g	mg	mg/100g
3001	63.5	12.6	140.6	27.9	131.7	26.1
3002	64.1	13.1	115.8	23.7	123.0	25.2
3003	59.1	11.7	121.6	24.0	85.0	16.8
3004	92.4	17.6	162.2	30.8	140.9	26.8
3005	87.8	17.0	165.8	32.1	116.4	22.6
3006	48.2	9.2	112.9	21.5	116.5	22.2
3007	88.4	15.0	164.7	27.9	106.2	18.0
3008	51.0	10.4	131.9	26.9	108.9	22.2
3009	61.3	11.5	108.8	20.4	99.3	18.6
3010	60.9	11.5	108.7	20.5	118.6	22.3
3011	57.9	10.1	122.7	21.5	117.9	20.6
3012	91.9	16.2	175.4	31.0	142.5	25.2
n	12	12	12	12	12	12
Mean	68.9	13.0	135.9	25.7	117.2	22.2
S.D.	16.4	2.8	24.9	4.3	16.5	3.3

AB : Absolute weight, RE : Relative weight by body weight
LABC: Levator ani and bulbocavernosus muscle
::: : Impossible to calculate
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 8 - 9 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Organ weight Stage : End of administration

Sex : Male Dose : EES 50 mg/kg Species : Rat

	Body weight	Brain		Thyroid-R		Thyroid-L		Thyroid-RL	
		AB	RE	AB	RE	AB	RE	AB	RE
Animal No.	g	g	g/100g	mg	mg/100g	mg	mg/100g	mg	mg/100g
4001	546	2.26	0.41	13.0	2.4	11.7	2.1	24.7	4.5
4002	495	2.18	0.44	12.1	2.4	12.6	2.5	24.7	5.0
4003	529	2.10	0.40	15.3	2.9	8.7	1.6	24.0	4.5
4004	497	2.15	0.43	11.6	2.3	14.1	2.8	25.7	5.2
4005	515	2.07	0.40	10.6	2.1	11.4	2.2	22.0	4.3
4006	550	2.16	0.39	12.6	2.3	10.5	1.9	23.1	4.2
4007	519	2.04	0.39	13.9	2.7	12.7	2.4	26.6	5.1
n	7	7	7	7	7	7	7	7	7
Mean	522	2.14	0.41	12.7	2.4	11.7	2.2	24.4	4.7
S.D.	22	0.07	0.02	1.5	0.3	1.7	0.4	1.5	0.4

	Adrenal-R		Adrenal-L		Adrenal-RL		Thymus		Spleen	
	AB	RE	AB	RE	AB	RE	AB	RE	AB	RE
Animal No.	mg	mg/100g	mg	mg/100g	mg	mg/100g	mg	mg/100g	g	g/100g
4001	41	8	47	9	88	16	224	41	0.79	0.14
4002	30	6	31	6	61	12	259	52	0.68	0.14
4003	35	7	37	7	72	14	364	69	0.98	0.19
4004	32	6	31	6	63	13	383	77	0.75	0.15
4005	36	7	36	7	72	14	367	71	0.81	0.16
4006	31	6	33	6	64	12	417	76	0.82	0.15
4007	42	8	42	8	84	16	177	34	0.70	0.13
n	7	7	7	7	7	7	7	7	7	7
Mean	35	7	37	7	72	14	313	60	0.79	0.15
S.D.	5	1	6	1	11	2	92	18	0.10	0.02

	Heart		Liver		Kidney-R		Kidney-L		Kidney-RL	
	AB	RE	AB	RE	AB	RE	AB	RE	AB	RE
Animal No.	g	g/100g	g	g/100g	g	g/100g	g	g/100g	g	g/100g
4001	1.50	0.27	13.07	2.39	1.59	0.29	1.86	0.34	3.45	0.63
4002	1.44	0.29	11.97	2.42	1.59	0.32	1.49	0.30	3.08	0.62
4003	1.67	0.32	14.66	2.77	1.84	0.35	2.12	0.40	3.96	0.75
4004	1.34	0.27	12.16	2.45	1.46	0.29	1.69	0.34	3.15	0.63
4005	1.34	0.26	14.37	2.79	1.67	0.32	1.97	0.38	3.64	0.71
4006	1.79	0.33	13.81	2.51	1.83	0.33	1.87	0.34	3.70	0.67
4007	1.51	0.29	14.49	2.79	1.64	0.32	1.71	0.33	3.35	0.65
n	7	7	7	7	7	7	7	7	7	7
Mean	1.51	0.29	13.50	2.59	1.66	0.32	1.82	0.35	3.48	0.67
S.D.	0.17	0.03	1.12	0.19	0.14	0.02	0.21	0.03	0.31	0.05

AB : Absolute weight, RE : Relative weight by body weight

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 8 - 10 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Organ weight Stage : End of administration

Sex : Male Dose : EES 50 mg/kg Species : Rat

	Testis-R		Testis-L		Testis-RL		Epididymis-R		Epididymis-L	
	AB	RE	AB	RE	AB	RE	AB	RE	AB	RE
Animal No.	g	g/100g	g	g/100g	g	g/100g	mg	mg/100g	mg	mg/100g
4001	1.59	0.29	1.67	0.31	3.26	0.60	715	131	707	129
4002	1.97	0.40	2.02	0.41	3.99	0.81	742	150	794	160
4003	1.74	0.33	1.70	0.32	3.44	0.65	762	144	681	129
4004	1.65	0.33	1.71	0.34	3.36	0.68	665	134	697	140
4005	1.88	0.37	1.87	0.36	3.75	0.73	725	141	743	144
4006	1.87	0.34	1.79	0.33	3.66	0.67	710	129	690	125
4007	1.75	0.34	1.71	0.33	3.46	0.67	699	135	727	140
n	7	7	7	7	7	7	7	7	7	7
Mean	1.78	0.34	1.78	0.34	3.56	0.69	717	138	720	138
S.D.	0.14	0.03	0.13	0.03	0.25	0.07	31	8	39	12

	Epididymis-RL		Prostate		Seminal vesicle		LABC		Cowper's gland-R	
	AB	RE	AB	RE	AB	RE	AB	RE	AB	RE
Animal No.	mg	mg/100g	g	g/100g	g	g/100g	g	g/100g	mg	mg/100g
4001	1422	260	1.38	0.25	1.44	0.26	1.70	0.31	71.7	13.1
4002	1536	310	1.39	0.28	1.70	0.34	1.60	0.32	73.0	14.7
4003	1443	273	1.48	0.28	1.43	0.27	1.54	0.29	87.3	16.5
4004	1362	274	1.06	0.21	1.68	0.34	1.70	0.34	70.3	14.1
4005	1468	285	1.29	0.25	1.29	0.25	1.62	0.31	58.7	11.4
4006	1400	255	1.10	0.20	1.77	0.32	1.38	0.25	67.1	12.2
4007	1426	275	1.19	0.23	2.26	0.44	1.43	0.28	72.7	14.0
n	7	7	7	7	7	7	7	7	7	7
Mean	1437	276	1.27	0.24	1.65	0.32	1.57	0.30	71.5	13.7
S.D.	55	18	0.16	0.03	0.32	0.07	0.12	0.03	8.5	1.7

	Cowper's gland-L		Cowper's gland-RL		Glans penis	
	AB	RE	AB	RE	AB	RE
Animal No.	mg	mg/100g	mg	mg/100g	mg	mg/100g
4001	65.4	12.0	137.1	25.1	101.8	18.6
4002	61.7	12.5	134.7	27.2	105.2	21.3
4003	67.5	12.8	154.8	29.3	81.7	15.4
4004	55.5	11.2	125.8	25.3	127.4	25.6
4005	52.9	10.3	111.6	21.7	121.5	23.6
4006	78.5	14.3	145.6	26.5	94.8	17.2
4007	73.5	14.2	146.2	28.2	105.5	20.3
n	7	7	7	7	7	7
Mean	65.0	12.5	136.5	26.2	105.4	20.3
S.D.	9.2	1.5	14.4	2.5	15.4	3.6

AB : Absolute weight, RE : Relative weight by body weight

LABC: Levator ani and bulbocavernosus muscle

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 8 - 11 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Organ weight Stage : End of lactation (F0 dams)

Sex : Female Dose : EES 0 mg/kg Species : Rat

	Body weight	Brain		Thyroid-R		Thyroid-L		Thyroid-RL	
		AB	RE	AB	RE	AB	RE	AB	RE
Animal No.	g	g	g/100g	mg	mg/100g	mg	mg/100g	mg	mg/100g
1101	370	1.93	0.52	8.8	2.4	7.8	2.1	16.6	4.5
1102	329	1.95	0.59	8.4	2.6	7.1	2.2	15.5	4.7
1103	342	1.96	0.57	14.3	4.2	4.9	1.4	19.2	5.6
1104	364	1.96	0.54	10.6	2.9	6.5	1.8	17.1	4.7
1105	369	2.03	0.55	7.6	2.1	10.7	2.9	18.3	5.0
1106	327	2.05	0.63	10.8	3.3	12.5	3.8	23.3	7.1
1107	359	1.97	0.55	10.4	2.9	7.4	2.1	17.8	5.0
1108	323	1.97	0.61	8.5	2.6	8.5	2.6	17.0	5.3
1109	320	2.14	0.67	9.9	3.1	9.6	3.0	19.5	6.1
1110	327	2.03	0.62	8.3	2.5	8.5	2.6	16.8	5.1
1111	303	1.93	0.64	9.0	3.0	8.9	2.9	17.9	5.9
n	11	11	11	11	11	11	11	11	11
Mean	339	1.99	0.59	9.7	2.9	8.4	2.5	18.1	5.4
S.D.	23	0.06	0.05	1.9	0.6	2.1	0.7	2.1	0.8

	Adrenal-R		Adrenal-L		Adrenal-RL		Thymus		Spleen	
	AB	RE	AB	RE	AB	RE	AB	RE	AB	RE
Animal No.	mg	mg/100g	mg	mg/100g	mg	mg/100g	mg	mg/100g	g	g/100g
1101	37	10	46	12	83	22	265	72	0.64	0.17
1102	44	13	42	13	86	26	488	148	0.52	0.16
1103	43	13	48	14	91	27	310	91	0.60	0.18
1104	35	10	34	9	69	19	417	115	0.59	0.16
1105	39	11	42	11	81	22	259	70	0.63	0.17
1106	36	11	39	12	75	23	213	65	0.56	0.17
1107	38	11	40	11	78	22	217	60	0.72	0.20
1108	32	10	43	13	75	23	199	62	0.48	0.15
1109	39	12	43	13	82	26	236	74	0.57	0.18
1110	40	12	42	13	82	25	216	66	0.66	0.20
1111	32	11	34	11	66	22	405	134	0.60	0.20
n	11	11	11	11	11	11	11	11	11	11
Mean	38	11	41	12	79	23	293	87	0.60	0.18
S.D.	4	1	4	1	7	2	99	31	0.07	0.02

AB : Absolute weight, RE : Relative weight by body weight

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Study No. : R-1244

Organ weight

Stage : End of lactation (F0 dams)

Sex : Female

Dose : EES 0 mg/kg

Species : Rat

	Heart		Liver		Kidney-R		Kidney-L		Kidney-RL	
	AB	RE	AB	RE	AB	RE	AB	RE	AB	RE
Animal No.	g	g/100g	g	g/100g	g	g/100g	g	g/100g	g	g/100g
1101	1.42	0.38	12.57	3.40	1.24	0.34	1.39	0.38	2.63	0.71
1102	1.15	0.35	10.93	3.32	1.17	0.36	1.18	0.36	2.35	0.71
1103	1.31	0.38	11.51	3.37	1.18	0.35	1.18	0.35	2.36	0.69
1104	1.20	0.33	12.63	3.47	1.17	0.32	1.18	0.32	2.35	0.65
1105	1.42	0.38	11.73	3.18	1.24	0.34	1.28	0.35	2.52	0.68
1106	1.18	0.36	11.82	3.61	1.23	0.38	1.28	0.39	2.51	0.77
1107	1.21	0.34	14.18	3.95	1.42	0.40	1.44	0.40	2.86	0.80
1108	1.45	0.45	11.37	3.52	1.22	0.38	1.16	0.36	2.38	0.74
1109	1.14	0.36	12.15	3.80	1.24	0.39	1.14	0.36	2.38	0.74
1110	1.15	0.35	11.31	3.46	1.10	0.34	1.14	0.35	2.24	0.69
1111	0.98	0.32	10.00	3.30	1.15	0.38	1.19	0.39	2.34	0.77
n	11	11	11	11	11	11	11	11	11	11
Mean	1.24	0.36	11.84	3.49	1.21	0.36	1.23	0.36	2.45	0.72
S.D.	0.15	0.04	1.08	0.23	0.08	0.03	0.10	0.02	0.17	0.05

	Ovary-R		Ovary-L		Ovary-RL		Uterus	
	AB	RE	AB	RE	AB	RE	AB	RE
Animal No.	mg	mg/100g	mg	mg/100g	mg	mg/100g	mg	mg/100g
1101	55.6	15.0	44.6	12.1	100.2	27.1	552	149
1102	47.7	14.5	44.3	13.5	92.0	28.0	414	126
1103	46.9	13.7	44.2	12.9	91.1	26.6	535	156
1104	54.7	15.0	53.9	14.8	108.6	29.8	544	149
1105	52.1	14.1	45.4	12.3	97.5	26.4	581	157
1106	49.2	15.0	49.9	15.3	99.1	30.3	518	158
1107	59.7	16.6	51.6	14.4	111.3	31.0	648	181
1108	47.4	14.7	48.0	14.9	95.4	29.5	379	117
1109	59.7	18.7	47.8	14.9	107.5	33.6	545	170
1110	54.0	16.5	47.2	14.4	101.2	30.9	476	146
1111	57.7	19.0	52.4	17.3	110.1	36.3	529	175
n	11	11	11	11	11	11	11	11
Mean	53.2	15.7	48.1	14.3	101.3	30.0	520	153
S.D.	4.8	1.8	3.4	1.5	7.2	3.0	75	19

AB : Absolute weight, RE : Relative weight by body weight

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 8 - 13 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Organ weight Stage : End of lactation (F0 dams)

Sex : Female Dose : EES 5 mg/kg Species : Rat

	Body weight	Brain		Thyroid-R		Thyroid-L		Thyroid-RL	
		AB	RE	AB	RE	AB	RE	AB	RE
Animal No.	g	g	g/100g	mg	mg/100g	mg	mg/100g	mg	mg/100g
2101	362	2.02	0.56	11.1	3.1	8.1	2.2	19.2	5.3
2102	355	1.97	0.55	7.1	2.0	7.5	2.1	14.6	4.1
2103	351	1.98	0.56	8.9	2.5	11.0	3.1	19.9	5.7
2104	372	2.04	0.55	10.1	2.7	8.9	2.4	19.0	5.1
2105	330	2.12	0.64	8.4	2.5	9.0	2.7	17.4	5.3
2106	352	1.99	0.57	9.0	2.6	8.0	2.3	17.0	4.8
2107	365	2.05	0.56	9.6	2.6	10.9	3.0	20.5	5.6
2108	345	2.05	0.59	10.0	2.9	9.3	2.7	19.3	5.6
2109	355	1.98	0.56	10.6	3.0	10.1	2.8	20.7	5.8
2110	337	2.03	0.60	7.8	2.3	7.1	2.1	14.9	4.4
2111	375	2.19	0.58	11.2	3.0	9.9	2.6	21.1	5.6
2112	324	1.92	0.59	9.5	2.9	8.5	2.6	18.0	5.6
n	12	12	12	12	12	12	12	12	12
Mean	352	2.03	0.58	9.4	2.7	9.0	2.6	18.5	5.2
S.D.	16	0.07	0.03	1.3	0.3	1.3	0.3	2.1	0.5

	Adrenal-R		Adrenal-L		Adrenal-RL		Thymus		Spleen	
	AB	RE	AB	RE	AB	RE	AB	RE	AB	RE
Animal No.	mg	mg/100g	mg	mg/100g	mg	mg/100g	mg	mg/100g	g	g/100g
2101	36	10	42	12	78	22	335	93	0.71	0.20
2102	36	10	38	11	74	21	216	61	0.70	0.20
2103	39	11	41	12	80	23	239	68	0.62	0.18
2104	43	12	42	11	85	23	322	87	0.68	0.18
2105	42	13	39	12	81	25	182	55	0.50	0.15
2106	37	11	43	12	80	23	343	97	0.62	0.18
2107	40	11	41	11	81	22	277	76	0.57	0.16
2108	36	10	37	11	73	21	275	80	0.66	0.19
2109	40	11	36	10	76	21	300	85	0.69	0.19
2110	34	10	39	12	73	22	237	70	0.69	0.20
2111	45	12	53	14	98	26	332	89	0.62	0.17
2112	32	10	37	11	69	21	446	138	0.68	0.21
n	12	12	12	12	12	12	12	12	12	12
Mean	38	11	41	12	79	23	292	83	0.65	0.18
S.D.	4	1	4	1	7	2	71	22	0.06	0.02

AB : Absolute weight, RE : Relative weight by body weight

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Study No. : R-1244

Organ weight

Stage : End of lactation (F0 dams)

Sex : Female

Dose : EES 5 mg/kg

Species : Rat

	Heart		Liver		Kidney-R		Kidney-L		Kidney-RL	
	AB	RE	AB	RE	AB	RE	AB	RE	AB	RE
Animal No.	g	g/100g	g	g/100g	g	g/100g	g	g/100g	g	g/100g
2101	1.20	0.33	14.61	4.04	1.22	0.34	1.20	0.33	2.42	0.67
2102	1.28	0.36	12.89	3.63	1.26	0.35	1.21	0.34	2.47	0.70
2103	1.36	0.39	11.83	3.37	1.29	0.37	1.26	0.36	2.55	0.73
2104	1.34	0.36	13.06	3.51	1.26	0.34	1.38	0.37	2.64	0.71
2105	1.25	0.38	12.25	3.71	1.27	0.38	1.25	0.38	2.52	0.76
2106	1.17	0.33	12.22	3.47	1.16	0.33	1.19	0.34	2.35	0.67
2107	1.16	0.32	13.32	3.65	1.29	0.35	1.27	0.35	2.56	0.70
2108	1.08	0.31	11.86	3.44	1.16	0.34	1.11	0.32	2.27	0.66
2109	1.26	0.35	12.41	3.50	1.22	0.34	1.32	0.37	2.54	0.72
2110	1.18	0.35	12.22	3.63	1.08	0.32	1.22	0.36	2.30	0.68
2111	1.28	0.34	13.60	3.63	1.41	0.38	1.53	0.41	2.94	0.78
2112	1.08	0.33	10.71	3.31	1.11	0.34	1.15	0.35	2.26	0.70
n	12	12	12	12	12	12	12	12	12	12
Mean	1.22	0.35	12.58	3.57	1.23	0.35	1.26	0.36	2.49	0.71
S.D.	0.09	0.02	1.00	0.19	0.09	0.02	0.11	0.02	0.19	0.04

	Ovary-R		Ovary-L		Ovary-RL		Uterus	
	AB	RE	AB	RE	AB	RE	AB	RE
Animal No.	mg	mg/100g	mg	mg/100g	mg	mg/100g	mg	mg/100g
2101	55.4	15.3	50.0	13.8	105.4	29.1	527	146
2102	39.5	11.1	46.0	13.0	85.5	24.1	596	168
2103	50.6	14.4	42.6	12.1	93.2	26.6	614	175
2104	49.0	13.2	54.2	14.6	103.2	27.7	478	128
2105	55.8	16.9	46.1	14.0	101.9	30.9	535	162
2106	63.9	18.2	47.6	13.5	111.5	31.7	475	135
2107	48.9	13.4	49.1	13.5	98.0	26.8	543	149
2108	55.3	16.0	48.2	14.0	103.5	30.0	469	136
2109	54.4	15.3	45.0	12.7	99.4	28.0	655	185
2110	41.2	12.2	62.3	18.5	103.5	30.7	542	161
2111	50.0	13.3	52.1	13.9	102.1	27.2	673	179
2112	54.1	16.7	35.6	11.0	89.7	27.7	568	175
n	12	12	12	12	12	12	12	12
Mean	51.5	14.7	48.2	13.7	99.7	28.4	556	158
S.D.	6.6	2.1	6.5	1.8	7.2	2.2	68	19

AB : Absolute weight, RE : Relative weight by body weight

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Study No. : R-1244

Organ weight

Stage : End of lactation (F0 dams)

Sex : Female

Dose : EES 15 mg/kg

Species : Rat

	Body weight	Brain		Thyroid-R		Thyroid-L		Thyroid-RL	
		AB	RE	AB	RE	AB	RE	AB	RE
Animal No.	g	g	g/100g	mg	mg/100g	mg	mg/100g	mg	mg/100g
3101	373	2.13	0.57	7.8	2.1	11.9	3.2	19.7	5.3
3103	328	2.11	0.64	9.0	2.7	8.4	2.6	17.4	5.3
3104	351	2.02	0.58	14.1	4.0	12.2	3.5	26.3	7.5
3106	319	1.82	0.57	7.6	2.4	10.8	3.4	18.4	5.8
3107	332	2.05	0.62	11.8	3.6	9.6	2.9	21.4	6.4
3108	362	2.06	0.57	13.6	3.8	8.7	2.4	22.3	6.2
3109	366	2.03	0.55	11.6	3.2	9.3	2.5	20.9	5.7
3110	339	1.84	0.54	7.5	2.2	7.2	2.1	14.7	4.3
3111	351	2.02	0.58	8.4	2.4	8.6	2.5	17.0	4.8
3112	407	2.09	0.51	8.3	2.0	8.4	2.1	16.7	4.1
n	10	10	10	10	10	10	10	10	10
Mean	353	2.02	0.57	10.0	2.8	9.5	2.7	19.5	5.5
S.D.	26	0.11	0.04	2.6	0.7	1.6	0.5	3.4	1.0

	Adrenal-R		Adrenal-L		Adrenal-RL		Thymus		Spleen	
	AB	RE	AB	RE	AB	RE	AB	RE	AB	RE
Animal No.	mg	mg/100g	mg	mg/100g	mg	mg/100g	mg	mg/100g	g	g/100g
3101	45	12	60	16	105	28	226	61	0.59	0.16
3103	33	10	36	11	69	21	206	63	0.58	0.18
3104	38	11	41	12	79	23	343	98	0.82	0.23
3106	32	10	36	11	68	21	182	57	0.64	0.20
3107	43	13	48	14	91	27	130	39	0.45	0.14
3108	43	12	45	12	88	24	281	78	0.47	0.13
3109	49	13	53	14	102	28	286	78	0.65	0.18
3110	40	12	43	13	83	24	183	54	0.75	0.22
3111	33	9	39	11	72	21	256	73	0.57	0.16
3112	38	9	39	10	77	19	286	70	0.57	0.14
n	10	10	10	10	10	10	10	10	10	10
Mean	39	11	44	12	83	24	238	67	0.61	0.17
S.D.	6	2	8	2	13	3	64	16	0.11	0.03

AB : Absolute weight, RE : Relative weight by body weight

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Study No. : R-1244

Organ weight

Stage : End of lactation (F0 dams)

Sex : Female

Dose : EES 15 mg/kg

Species : Rat

	Heart		Liver		Kidney-R		Kidney-L		Kidney-RL	
	AB	RE	AB	RE	AB	RE	AB	RE	AB	RE
Animal No.	g	g/100g	g	g/100g	g	g/100g	g	g/100g	g	g/100g
3101	1.24	0.33	13.41	3.60	1.28	0.34	1.29	0.35	2.57	0.69
3103	1.08	0.33	11.33	3.45	1.09	0.33	1.06	0.32	2.15	0.66
3104	1.15	0.33	11.91	3.39	1.13	0.32	1.19	0.34	2.32	0.66
3106	1.13	0.35	11.58	3.63	1.19	0.37	1.20	0.38	2.39	0.75
3107	1.05	0.32	11.83	3.56	1.24	0.37	1.28	0.39	2.52	0.76
3108	1.22	0.34	11.91	3.29	1.09	0.30	1.17	0.32	2.26	0.62
3109	1.26	0.34	13.77	3.76	1.15	0.31	1.28	0.35	2.43	0.66
3110	1.07	0.32	11.38	3.36	1.15	0.34	1.15	0.34	2.30	0.68
3111	1.18	0.34	10.77	3.07	1.08	0.31	1.16	0.33	2.24	0.64
3112	1.28	0.31	14.20	3.49	1.46	0.36	1.45	0.36	2.91	0.71
n	10	10	10	10	10	10	10	10	10	10
Mean	1.17	0.33	12.21	3.46	1.19	0.34	1.22	0.35	2.41	0.68
S.D.	0.08	0.01	1.16	0.20	0.12	0.03	0.11	0.02	0.22	0.05

	Ovary-R		Ovary-L		Ovary-RL		Uterus	
	AB	RE	AB	RE	AB	RE	AB	RE
Animal No.	mg	mg/100g	mg	mg/100g	mg	mg/100g	mg	mg/100g
3101	47.7	12.8	51.4	13.8	99.1	26.6	532	143
3103	46.6	14.2	41.3	12.6	87.9	26.8	510	155
3104	57.3	16.3	60.1	17.1	117.4	33.4	596	170
3106	33.4	10.5	45.5	14.3	78.9	24.7	449	141
3107	48.0	14.5	44.9	13.5	92.9	28.0	456	137
3108	57.9	16.0	44.7	12.3	102.6	28.3	964	266
3109	49.8	13.6	44.0	12.0	93.8	25.6	505	138
3110	57.2	16.9	41.5	12.2	98.7	29.1	457	135
3111	44.4	12.6	44.9	12.8	89.3	25.4	481	137
3112	48.8	12.0	49.2	12.1	98.0	24.1	571	140
n	10	10	10	10	10	10	10	10
Mean	49.1	13.9	46.8	13.3	95.9	27.2	552	156
S.D.	7.4	2.0	5.6	1.6	10.2	2.7	153	40

AB : Absolute weight, RE : Relative weight by body weight

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Study No. : R-1244

Organ weight

Stage : End of lactation (F0 dams)

Sex : Female

Dose : EES 50 mg/kg

Species : Rat

	Body weight	Brain		Thyroid-R		Thyroid-L		Thyroid-RL	
		AB	RE	AB	RE	AB	RE	AB	RE
Animal No.	g	g	g/100g	mg	mg/100g	mg	mg/100g	mg	mg/100g
4101	354	1.88	0.53	16.5	4.7	15.3	4.3	31.8	9.0
4103	334	1.98	0.59	7.7	2.3	10.9	3.3	18.6	5.6
4104	347	2.00	0.58	6.9	2.0	8.4	2.4	15.3	4.4
4105	339	2.00	0.59	9.5	2.8	6.9	2.0	16.4	4.8
4106	322	1.86	0.58	8.3	2.6	6.8	2.1	15.1	4.7
4107	363	1.92	0.53	5.7	1.6	11.0	3.0	16.7	4.6
4108	372	1.90	0.51	9.7	2.6	9.6	2.6	19.3	5.2
4109	366	1.98	0.54	13.9	3.8	8.7	2.4	22.6	6.2
4110	318	1.85	0.58	8.5	2.7	8.9	2.8	17.4	5.5
4111	346	2.05	0.59	7.3	2.1	9.9	2.9	17.2	5.0
4112	316	1.93	0.61	8.1	2.6	8.4	2.7	16.5	5.2
n	11	11	11	11	11	11	11	11	11
Mean	343	1.94	0.57	9.3	2.7	9.5	2.8	18.8	5.5
S.D.	20	0.07	0.03	3.2	0.9	2.4	0.6	4.8	1.3

	Adrenal-R		Adrenal-L		Adrenal-RL		Thymus		Spleen	
	AB	RE	AB	RE	AB	RE	AB	RE	AB	RE
Animal No.	mg	mg/100g	mg	mg/100g	mg	mg/100g	mg	mg/100g	g	g/100g
4101	35	10	39	11	74	21	189	53	0.59	0.17
4103	40	12	48	14	88	26	297	89	0.71	0.21
4104	33	10	38	11	71	20	313	90	0.75	0.22
4105	21	6	37	11	58	17	230	68	0.61	0.18
4106	41	13	45	14	86	27	228	71	0.51	0.16
4107	38	10	39	11	77	21	369	102	0.61	0.17
4108	45	12	49	13	94	25	254	68	0.67	0.18
4109	37	10	44	12	81	22	267	73	0.60	0.16
4110	42	13	46	14	88	28	217	68	0.49	0.15
4111	30	9	32	9	62	18	225	65	0.64	0.18
4112	40	13	41	13	81	26	126	40	0.55	0.17
n	11	11	11	11	11	11	11	11	11	11
Mean	37	11	42	12	78	23	247	72	0.61	0.18
S.D.	7	2	5	2	11	4	65	17	0.08	0.02

AB : Absolute weight, RE : Relative weight by body weight

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Study No. : R-1244

Organ weight

Stage : End of lactation (F0 dams)

Sex : Female

Dose : EES 50 mg/kg

Species : Rat

	Heart		Liver		Kidney-R		Kidney-L		Kidney-RL	
	AB	RE	AB	RE	AB	RE	AB	RE	AB	RE
Animal No.	g	g/100g	g	g/100g	g	g/100g	g	g/100g	g	g/100g
4101	1.27	0.36	12.43	3.51	1.24	0.35	1.17	0.33	2.41	0.68
4103	1.33	0.40	11.55	3.46	1.15	0.34	1.11	0.33	2.26	0.68
4104	1.33	0.38	11.46	3.30	1.33	0.38	1.40	0.40	2.73	0.79
4105	1.18	0.35	11.72	3.46	1.24	0.37	1.22	0.36	2.46	0.73
4106	1.20	0.37	11.51	3.57	1.06	0.33	1.12	0.35	2.18	0.68
4107	1.12	0.31	10.84	2.99	1.39	0.38	1.37	0.38	2.76	0.76
4108	1.18	0.32	12.55	3.37	1.19	0.32	1.29	0.35	2.48	0.67
4109	1.30	0.36	12.82	3.50	1.14	0.31	1.18	0.32	2.32	0.63
4110	1.12	0.35	11.57	3.64	1.15	0.36	1.14	0.36	2.29	0.72
4111	1.07	0.31	10.96	3.17	1.11	0.32	1.11	0.32	2.22	0.64
4112	1.04	0.33	11.21	3.55	1.13	0.36	1.27	0.40	2.40	0.76
n	11	11	11	11	11	11	11	11	11	11
Mean	1.19	0.35	11.69	3.41	1.19	0.35	1.22	0.35	2.41	0.70
S.D.	0.10	0.03	0.65	0.19	0.10	0.02	0.10	0.03	0.19	0.05

	Ovary-R		Ovary-L		Ovary-RL		Uterus	
	AB	RE	AB	RE	AB	RE	AB	RE
Animal No.	mg	mg/100g	mg	mg/100g	mg	mg/100g	mg	mg/100g
4101	48.8	13.8	60.7	17.1	109.5	30.9	451	127
4103	49.4	14.8	48.4	14.5	97.8	29.3	523	157
4104	46.2	13.3	49.7	14.3	95.9	27.6	630	182
4105	40.8	12.0	43.2	12.7	84.0	24.8	526	155
4106	45.8	14.2	48.7	15.1	94.5	29.3	515	160
4107	58.3	16.1	41.0	11.3	99.3	27.4	672	185
4108	57.2	15.4	40.6	10.9	97.8	26.3	627	169
4109	46.6	12.7	45.5	12.4	92.1	25.2	476	130
4110	48.5	15.3	51.1	16.1	99.6	31.3	487	153
4111	55.5	16.0	43.9	12.7	99.4	28.7	557	161
4112	44.8	14.2	45.6	14.4	90.4	28.6	514	163
n	11	11	11	11	11	11	11	11
Mean	49.3	14.3	47.1	13.8	96.4	28.1	543	158
S.D.	5.5	1.3	5.7	1.9	6.4	2.1	71	18

AB : Absolute weight, RE : Relative weight by body weight

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Organ weight

Stage : End of administration (non-mating group)

Sex : Female

Dose : EES 0 mg/kg

Species : Rat

	Body weight	Brain		Thyroid-R		Thyroid-L		Thyroid-RL	
		AB	RE	AB	RE	AB	RE	AB	RE
Animal No.	g	g	g/100g	mg	mg/100g	mg	mg/100g	mg	mg/100g
5101	287	2.09	0.73	9.6	3.3	10.0	3.5	19.6	6.8
5102	263	1.96	0.75	10.4	4.0	10.1	3.8	20.5	7.8
5103	322	1.90	0.59	6.7	2.1	4.4	1.4	11.1	3.4
5104	283	2.04	0.72	6.0	2.1	7.2	2.5	13.2	4.7
5105	302	2.05	0.68	9.7	3.2	11.3	3.7	21.0	7.0
n	5	5	5	5	5	5	5	5	5
Mean	291	2.01	0.69	8.5	2.9	8.6	3.0	17.1	5.9
S.D.	22	0.08	0.06	2.0	0.8	2.8	1.0	4.6	1.8

	Adrenal-R		Adrenal-L		Adrenal-RL		Thymus		Spleen	
	AB	RE	AB	RE	AB	RE	AB	RE	AB	RE
Animal No.	mg	mg/100g	mg	mg/100g	mg	mg/100g	mg	mg/100g	g	g/100g
5101	36	13	35	12	71	25	257	90	0.53	0.18
5102	33	13	34	13	67	25	280	106	0.39	0.15
5103	34	11	38	12	72	22	328	102	0.63	0.20
5104	46	16	50	18	96	34	254	90	0.52	0.18
5105	28	9	32	11	60	20	302	100	0.49	0.16
n	5	5	5	5	5	5	5	5	5	5
Mean	35	12	38	13	73	25	284	98	0.51	0.17
S.D.	7	3	7	3	14	5	31	7	0.09	0.02

	Heart		Liver		Kidney-R		Kidney-L		Kidney-RL	
	AB	RE	AB	RE	AB	RE	AB	RE	AB	RE
Animal No.	g	g/100g	g	g/100g	g	g/100g	g	g/100g	g	g/100g
5101	0.87	0.30	7.06	2.46	0.92	0.32	0.92	0.32	1.84	0.64
5102	0.81	0.31	6.31	2.40	0.83	0.32	0.82	0.31	1.65	0.63
5103	1.00	0.31	9.38	2.91	1.13	0.35	1.25	0.39	2.38	0.74
5104	0.98	0.35	7.93	2.80	0.98	0.35	0.90	0.32	1.88	0.66
5105	0.95	0.31	6.82	2.26	0.97	0.32	0.98	0.32	1.95	0.65
n	5	5	5	5	5	5	5	5	5	5
Mean	0.92	0.32	7.50	2.57	0.97	0.33	0.97	0.33	1.94	0.66
S.D.	0.08	0.02	1.20	0.28	0.11	0.02	0.16	0.03	0.27	0.04

AB : Absolute weight, RE : Relative weight by body weight

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 8 - 20 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Organ weight Stage : End of administration (non-mating group)

Sex : Female Dose : EES 0 mg/kg Species : Rat

	Ovary-R		Ovary-L		Ovary-RL		Uterus	
Animal No.	AB mg	RE mg/100g	AB mg	RE mg/100g	AB mg	RE mg/100g	AB mg	RE mg/100g
5101	52.8	18.4	51.8	18.0	104.6	36.4	692	241
5102	40.6	15.4	46.4	17.6	87.0	33.1	586	223
5103	50.3	15.6	41.7	13.0	92.0	28.6	714	222
5104	32.4	11.4	38.9	13.7	71.3	25.2	805	284
5105	40.0	13.2	33.8	11.2	73.8	24.4	411	136
n	5	5	5	5	5	5	5	5
Mean	43.2	14.8	42.5	14.7	85.7	29.5	642	221
S.D.	8.3	2.6	6.9	3.0	13.7	5.1	151	54

AB : Absolute weight, RE : Relative weight by body weight

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Study No. : R-1244

Organ weight

Stage : End of administration (non-mating group)

Sex : Female

Dose : EES 50 mg/kg

Species : Rat

	Body weight	Brain		Thyroid-R		Thyroid-L		Thyroid-RL	
		AB	RE	AB	RE	AB	RE	AB	RE
Animal No.	g	g	g/100g	mg	mg/100g	mg	mg/100g	mg	mg/100g
6101	262	1.92	0.73	10.0	3.8	7.6	2.9	17.6	6.7
6102	344	2.09	0.61	8.8	2.6	7.5	2.2	16.3	4.7
6103	285	1.95	0.68	10.0	3.5	8.6	3.0	18.6	6.5
6104	317	2.02	0.64	11.4	3.6	6.3	2.0	17.7	5.6
6105	299	1.89	0.63	7.9	2.6	8.0	2.7	15.9	5.3
n	5	5	5	5	5	5	5	5	5
Mean	301	1.97	0.66	9.6	3.2	7.6	2.6	17.2	5.8
S.D.	31	0.08	0.05	1.3	0.6	0.8	0.4	1.1	0.8

	Adrenal-R		Adrenal-L		Adrenal-RL		Thymus		Spleen	
	AB	RE	AB	RE	AB	RE	AB	RE	AB	RE
Animal No.	mg	mg/100g	mg	mg/100g	mg	mg/100g	mg	mg/100g	g	g/100g
6101	39	15	41	16	80	31	229	87	0.39	0.15
6102	33	10	33	10	66	19	393	114	0.58	0.17
6103	32	11	36	13	68	24	349	122	0.44	0.15
6104	32	10	33	10	65	21	355	112	0.50	0.16
6105	34	11	36	12	70	23	357	119	0.62	0.21
n	5	5	5	5	5	5	5	5	5	5
Mean	34	11	36	12	70	24	337	111	0.51	0.17
S.D.	3	2	3	2	6	5	63	14	0.10	0.02

	Heart		Liver		Kidney-R		Kidney-L		Kidney-RL	
	AB	RE	AB	RE	AB	RE	AB	RE	AB	RE
Animal No.	g	g/100g	g	g/100g	g	g/100g	g	g/100g	g	g/100g
6101	0.98	0.37	6.86	2.62	0.88	0.34	0.94	0.36	1.82	0.69
6102	1.08	0.31	8.81	2.56	1.14	0.33	1.13	0.33	2.27	0.66
6103	0.93	0.33	6.95	2.44	0.89	0.31	0.86	0.30	1.75	0.61
6104	1.04	0.33	8.10	2.56	1.05	0.33	1.06	0.33	2.11	0.67
6105	0.92	0.31	8.07	2.70	0.90	0.30	0.96	0.32	1.86	0.62
n	5	5	5	5	5	5	5	5	5	5
Mean	0.99	0.33	7.76	2.58	0.97	0.32	0.99	0.33	1.96	0.65
S.D.	0.07	0.02	0.83	0.10	0.12	0.02	0.11	0.02	0.22	0.03

AB : Absolute weight, RE : Relative weight by body weight

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 8 - 22 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Organ weight Stage : End of administration (non-mating group)

Sex : Female Dose : EES 50 mg/kg Species : Rat

	Ovary-R		Ovary-L		Ovary-RL		Uterus	
Animal No.	AB mg	RE mg/100g	AB mg	RE mg/100g	AB mg	RE mg/100g	AB mg	RE mg/100g
6101	39.9	15.2	40.5	15.5	80.4	30.7	509	194
6102	55.1	16.0	51.3	14.9	106.4	30.9	612	178
6103	34.9	12.2	40.2	14.1	75.1	26.4	667	234
6104	57.4	18.1	48.2	15.2	105.6	33.3	721	227
6105	47.9	16.0	41.0	13.7	88.9	29.7	565	189
n	5	5	5	5	5	5	5	5
Mean	47.0	15.5	44.2	14.7	91.3	30.2	615	204
S.D.	9.6	2.1	5.2	0.8	14.3	2.5	83	25

AB : Absolute weight, RE : Relative weight by body weight

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Organ weight

Stage : End of recovery

Sex : Male

Dose : EES 0 mg/kg

Species : Rat

Animal No.	Body weight g	Brain AB g	Brain RE g/100g	Thyroid-R AB mg	Thyroid-R RE mg/100g	Thyroid-L AB mg	Thyroid-L RE mg/100g	Thyroid-RL AB mg	Thyroid-RL RE mg/100g
1008	556	2.13	0.38	10.1	1.8	9.5	1.7	19.6	3.5
1009	534	2.29	0.43	13.2	2.5	12.0	2.2	25.2	4.7
1010	542	2.24	0.41	12.0	2.2	10.8	2.0	22.8	4.2
1011	526	2.22	0.42	9.2	1.7	10.1	1.9	19.3	3.7
1012	610	2.23	0.37	11.8	1.9	12.6	2.1	24.4	4.0
n	5	5	5	5	5	5	5	5	5
Mean	554	2.22	0.40	11.3	2.0	11.0	2.0	22.3	4.0
S.D.	33	0.06	0.03	1.6	0.3	1.3	0.2	2.7	0.5

Animal No.	Adrenal-R AB mg	Adrenal-R RE mg/100g	Adrenal-L AB mg	Adrenal-L RE mg/100g	Adrenal-RL AB mg	Adrenal-RL RE mg/100g	Thymus AB mg	Thymus RE mg/100g	Spleen AB g	Spleen RE g/100g
1008	31	6	34	6	65	12	290	52	0.84	0.15
1009	33	6	34	6	67	13	283	53	0.68	0.13
1010	41	8	43	8	84	15	362	67	0.90	0.17
1011	20	4	29	6	49	9	239	45	0.79	0.15
1012	24	4	29	5	53	9	299	49	0.84	0.14
n	5	5	5	5	5	5	5	5	5	5
Mean	30	6	34	6	64	12	295	53	0.81	0.15
S.D.	8	2	6	1	14	3	44	8	0.08	0.01

Animal No.	Heart AB g	Heart RE g/100g	Liver AB g	Liver RE g/100g	Kidney-R AB g	Kidney-R RE g/100g	Kidney-L AB g	Kidney-L RE g/100g	Kidney-RL AB g	Kidney-RL RE g/100g
1008	1.46	0.26	12.91	2.32	1.68	0.30	2.01	0.36	3.69	0.66
1009	1.55	0.29	14.77	2.77	1.81	0.34	1.97	0.37	3.78	0.71
1010	1.66	0.31	14.63	2.70	1.89	0.35	2.07	0.38	3.96	0.73
1011	1.55	0.29	12.49	2.37	1.72	0.33	1.62	0.31	3.34	0.63
1012	1.56	0.26	15.90	2.61	2.11	0.35	1.99	0.33	4.10	0.67
n	5	5	5	5	5	5	5	5	5	5
Mean	1.56	0.28	14.14	2.55	1.84	0.33	1.93	0.35	3.77	0.68
S.D.	0.07	0.02	1.41	0.20	0.17	0.02	0.18	0.03	0.29	0.04

AB : Absolute weight, RE : Relative weight by body weight

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Organ weight

Stage : End of recovery

Sex : Male

Dose : EES 0 mg/kg

Species : Rat

	Testis-R		Testis-L		Testis-RL		Epididymis-R		Epididymis-L	
	AB	RE	AB	RE	AB	RE	AB	RE	AB	RE
Animal No.	g	g/100g	g	g/100g	g	g/100g	mg	mg/100g	mg	mg/100g
1008	1.78	0.32	1.81	0.33	3.59	0.65	763	137	743	134
1009	1.42	0.27	1.47	0.28	2.89	0.54	625	117	597	112
1010	1.68	0.31	1.70	0.31	3.38	0.62	697	129	697	129
1011	1.77	0.34	1.77	0.34	3.54	0.67	744	141	716	136
1012	1.72	0.28	1.80	0.30	3.52	0.58	652	107	624	102
n	5	5	5	5	5	5	5	5	5	5
Mean	1.67	0.30	1.71	0.31	3.38	0.61	696	126	675	123
S.D.	0.15	0.03	0.14	0.02	0.29	0.05	59	14	62	15

	Epididymis-RL		Prostate		Seminal vesicle		LABC		Cowper's gland-R	
	AB	RE	AB	RE	AB	RE	AB	RE	AB	RE
Animal No.	mg	mg/100g	g	g/100g	g	g/100g	g	g/100g	mg	mg/100g
1008	1506	271	1.51	0.27	1.88	0.34	1.68	0.30	52.1	9.4
1009	1222	229	1.09	0.20	1.81	0.34	1.66	0.31	54.7	10.2
1010	1394	257	1.50	0.28	2.04	0.38	1.65	0.30	89.8	16.6
1011	1460	278	1.23	0.23	1.86	0.35	1.77	0.34	58.7	11.2
1012	1276	209	1.31	0.21	1.47	0.24	1.53	0.25	70.3	11.5
n	5	5	5	5	5	5	5	5	5	5
Mean	1372	249	1.33	0.24	1.81	0.33	1.66	0.30	65.1	11.8
S.D.	120	29	0.18	0.04	0.21	0.05	0.09	0.03	15.5	2.8

	Cowper's gland-L		Cowper's gland-RL		Glans penis	
	AB	RE	AB	RE	AB	RE
Animal No.	mg	mg/100g	mg	mg/100g	mg	mg/100g
1008	64.0	11.5	116.1	20.9	134.1	24.1
1009	61.2	11.5	115.9	21.7	121.7	22.8
1010	65.8	12.1	155.6	28.7	140.1	25.8
1011	56.6	10.8	115.3	21.9	126.1	24.0
1012	61.8	10.1	132.1	21.7	104.0	17.0
n	5	5	5	5	5	5
Mean	61.9	11.2	127.0	23.0	125.2	22.7
S.D.	3.5	0.8	17.5	3.2	13.8	3.4

AB : Absolute weight, RE : Relative weight by body weight

LABC: Levator ani and bulbocavernosus muscle

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Study No. : R-1244

Organ weight

Stage : End of recovery

Sex : Male

Dose : EES 50 mg/kg

Species : Rat

	Body weight	Brain		Thyroid-R		Thyroid-L		Thyroid-RL	
		AB	RE	AB	RE	AB	RE	AB	RE
Animal No.	g	g	g/100g	mg	mg/100g	mg	mg/100g	mg	mg/100g
4008	552	2.12	0.38	12.3	2.2	12.9	2.3	25.2	4.6
4009	554	2.28	0.41	13.4	2.4	10.0	1.8	23.4	4.2
4010	530	2.26	0.43	10.7	2.0	12.1	2.3	22.8	4.3
4011	461	1.95	0.42	10.0	2.2	8.2	1.8	18.2	3.9
4012	533	2.19	0.41	11.7	2.2	11.8	2.2	23.5	4.4
n	5	5	5	5	5	5	5	5	5
Mean	526	2.16	0.41	11.6	2.2	11.0	2.1	22.6	4.3
S.D.	38	0.13	0.02	1.3	0.1	1.9	0.3	2.6	0.3

	Adrenal-R		Adrenal-L		Adrenal-RL		Thymus		Spleen	
	AB	RE	AB	RE	AB	RE	AB	RE	AB	RE
Animal No.	mg	mg/100g	mg	mg/100g	mg	mg/100g	mg	mg/100g	g	g/100g
4008	29	5	32	6	61	11	401	73	0.77	0.14
4009	25	5	30	5	55	10	268	48	0.87	0.16
4010	39	7	44	8	83	16	286	54	0.87	0.16
4011	37	8	43	9	80	17	362	79	0.64	0.14
4012	31	6	30	6	61	11	292	55	0.66	0.12
n	5	5	5	5	5	5	5	5	5	5
Mean	32	6	36	7	68	13	322	62	0.76	0.14
S.D.	6	1	7	2	13	3	57	13	0.11	0.02

	Heart		Liver		Kidney-R		Kidney-L		Kidney-RL	
	AB	RE	AB	RE	AB	RE	AB	RE	AB	RE
Animal No.	g	g/100g	g	g/100g	g	g/100g	g	g/100g	g	g/100g
4008	1.46	0.26	15.19	2.75	1.57	0.28	1.67	0.30	3.24	0.59
4009	1.51	0.27	14.00	2.53	1.65	0.30	1.65	0.30	3.30	0.60
4010	1.69	0.32	13.20	2.49	1.72	0.32	2.10	0.40	3.82	0.72
4011	1.24	0.27	10.79	2.34	1.53	0.33	1.70	0.37	3.23	0.70
4012	1.60	0.30	14.90	2.80	1.66	0.31	1.99	0.37	3.65	0.68
n	5	5	5	5	5	5	5	5	5	5
Mean	1.50	0.28	13.62	2.58	1.63	0.31	1.82	0.35	3.45	0.66
S.D.	0.17	0.03	1.76	0.19	0.08	0.02	0.21	0.05	0.27	0.06

AB : Absolute weight, RE : Relative weight by body weight

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Study No. : R-1244

Organ weight

Stage : End of recovery

Sex : Male

Dose : EES 50 mg/kg

Species : Rat

	Testis-R		Testis-L		Testis-RL		Epididymis-R		Epididymis-L	
	AB	RE	AB	RE	AB	RE	AB	RE	AB	RE
Animal No.	g	g/100g	g	g/100g	g	g/100g	mg	mg/100g	mg	mg/100g
4008	1.76	0.32	1.78	0.32	3.54	0.64	727	132	732	133
4009	1.90	0.34	1.83	0.33	3.73	0.67	630	114	604	109
4010	1.61	0.30	1.61	0.30	3.22	0.61	700	132	684	129
4011	1.60	0.35	1.58	0.34	3.18	0.69	612	133	628	136
4012	1.68	0.32	1.66	0.31	3.34	0.63	656	123	630	118
n	5	5	5	5	5	5	5	5	5	5
Mean	1.71	0.33	1.69	0.32	3.40	0.65	665	127	656	125
S.D.	0.12	0.02	0.11	0.02	0.23	0.03	48	8	52	11

	Epididymis-RL		Prostate		Seminal vesicle		LABC		Cowper's gland-R	
	AB	RE	AB	RE	AB	RE	AB	RE	AB	RE
Animal No.	mg	mg/100g	g	g/100g	g	g/100g	g	g/100g	mg	mg/100g
4008	1459	264	1.52	0.28	1.67	0.30	1.27	0.23	36.2	6.6
4009	1234	223	1.03	0.19	1.58	0.29	1.58	0.29	46.3	8.4
4010	1384	261	1.31	0.25	1.62	0.31	1.73	0.33	56.6	10.7
4011	1240	269	1.04	0.23	1.64	0.36	1.48	0.32	49.6	10.8
4012	1286	241	1.16	0.22	1.80	0.34	1.63	0.31	70.1	13.2
n	5	5	5	5	5	5	5	5	5	5
Mean	1321	252	1.21	0.23	1.66	0.32	1.54	0.30	51.8	9.9
S.D.	98	19	0.21	0.03	0.08	0.03	0.17	0.04	12.6	2.5

	Cowper's gland-L		Cowper's gland-RL		Glans penis	
	AB	RE	AB	RE	AB	RE
Animal No.	mg	mg/100g	mg	mg/100g	mg	mg/100g
4008	46.6	8.4	82.8	15.0	132.8	24.1
4009	51.7	9.3	98.0	17.7	123.3	22.3
4010	51.3	9.7	107.9	20.4	105.3	19.9
4011	57.4	12.5	107.0	23.2	101.1	21.9
4012	64.9	12.2	135.0	25.3	98.9	18.6
n	5	5	5	5	5	5
Mean	54.4	10.4	106.1	20.3	112.3	21.4
S.D.	7.0	1.8	19.0	4.1	15.0	2.1

AB : Absolute weight, RE : Relative weight by body weight

LABC: Levator ani and bulbocavernosus muscle

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Study No. : R-1244

Organ weight

Stage : End of recovery (non-mating group)

Sex : Female

Dose : EES 0 mg/kg

Species : Rat

	Body weight	Brain		Thyroid-R		Thyroid-L		Thyroid-RL	
		AB	RE	AB	RE	AB	RE	AB	RE
Animal No.	g	g	g/100g	mg	mg/100g	mg	mg/100g	mg	mg/100g
5106	310	2.05	0.66	10.0	3.2	9.9	3.2	19.9	6.4
5107	318	1.88	0.59	7.4	2.3	7.0	2.2	14.4	4.5
5108	300	1.97	0.66	7.8	2.6	6.9	2.3	14.7	4.9
5109	288	2.02	0.70	6.0	2.1	6.0	2.1	12.0	4.2
5110	309	2.06	0.67	9.5	3.1	7.5	2.4	17.0	5.5
n	5	5	5	5	5	5	5	5	5
Mean	305	2.00	0.66	8.1	2.7	7.5	2.4	15.6	5.1
S.D.	11	0.07	0.04	1.6	0.5	1.5	0.4	3.0	0.9

	Adrenal-R		Adrenal-L		Adrenal-RL		Thymus		Spleen	
	AB	RE	AB	RE	AB	RE	AB	RE	AB	RE
Animal No.	mg	mg/100g	mg	mg/100g	mg	mg/100g	mg	mg/100g	g	g/100g
5106	33	11	35	11	68	22	357	115	0.65	0.21
5107	29	9	29	9	58	18	230	72	0.63	0.20
5108	33	11	34	11	67	22	210	70	0.50	0.17
5109	28	10	28	10	56	19	289	100	0.39	0.14
5110	34	11	34	11	68	22	246	80	0.56	0.18
n	5	5	5	5	5	5	5	5	5	5
Mean	31	10	32	10	63	21	266	87	0.55	0.18
S.D.	3	1	3	1	6	2	58	19	0.11	0.03

	Heart		Liver		Kidney-R		Kidney-L		Kidney-RL	
	AB	RE	AB	RE	AB	RE	AB	RE	AB	RE
Animal No.	g	g/100g	g	g/100g	g	g/100g	g	g/100g	g	g/100g
5106	0.96	0.31	8.04	2.59	1.03	0.33	0.99	0.32	2.02	0.65
5107	0.98	0.31	7.54	2.37	1.01	0.32	1.02	0.32	2.03	0.64
5108	0.95	0.32	7.48	2.49	0.96	0.32	0.92	0.31	1.88	0.63
5109	0.87	0.30	6.34	2.20	0.92	0.32	0.88	0.31	1.80	0.63
5110	0.92	0.30	6.77	2.19	1.11	0.36	1.14	0.37	2.25	0.73
n	5	5	5	5	5	5	5	5	5	5
Mean	0.94	0.31	7.23	2.37	1.01	0.33	0.99	0.33	2.00	0.66
S.D.	0.04	0.01	0.67	0.18	0.07	0.02	0.10	0.03	0.17	0.04

AB : Absolute weight, RE : Relative weight by body weight

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 8 - 28 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Organ weight Stage : End of recovery (non-mating group)

Sex : Female Dose : EES 0 mg/kg Species : Rat

	Ovary-R		Ovary-L		Ovary-RL		Uterus	
Animal No.	AB mg	RE mg/100g	AB mg	RE mg/100g	AB mg	RE mg/100g	AB mg	RE mg/100g
5106	46.6	15.0	46.0	14.8	92.6	29.9	492	159
5107	38.6	12.1	41.3	13.0	79.9	25.1	620	195
5108	47.7	15.9	54.3	18.1	102.0	34.0	663	221
5109	45.1	15.7	29.9	10.4	75.0	26.0	444	154
5110	54.2	17.5	44.7	14.5	98.9	32.0	524	170
n	5	5	5	5	5	5	5	5
Mean	46.4	15.2	43.2	14.2	89.7	29.4	549	180
S.D.	5.6	2.0	8.9	2.8	11.8	3.8	91	28

AB : Absolute weight, RE : Relative weight by body weight

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Organ weight

Stage : End of recovery (non-mating group)

Sex : Female

Dose : EES 50 mg/kg

Species : Rat

	Body weight	Brain		Thyroid-R		Thyroid-L		Thyroid-RL	
		AB	RE	AB	RE	AB	RE	AB	RE
Animal No.	g	g	g/100g	mg	mg/100g	mg	mg/100g	mg	mg/100g
6106	309	2.19	0.71	8.4	2.7	7.3	2.4	15.7	5.1
6107	304	1.91	0.63	7.2	2.4	8.4	2.8	15.6	5.1
6108	277	1.92	0.69	7.7	2.8	7.9	2.9	15.6	5.6
6109	342	2.01	0.59	8.2	2.4	9.7	2.8	17.9	5.2
6110	312	1.87	0.60	11.2	3.6	8.7	2.8	19.9	6.4
n	5	5	5	5	5	5	5	5	5
Mean	309	1.98	0.64	8.5	2.8	8.4	2.7	16.9	5.5
S.D.	23	0.13	0.05	1.6	0.5	0.9	0.2	1.9	0.6

	Adrenal-R		Adrenal-L		Adrenal-RL		Thymus		Spleen	
	AB	RE	AB	RE	AB	RE	AB	RE	AB	RE
Animal No.	mg	mg/100g	mg	mg/100g	mg	mg/100g	mg	mg/100g	g	g/100g
6106	40	13	42	14	82	27	322	104	0.57	0.18
6107	33	11	32	11	65	21	305	100	0.58	0.19
6108	28	10	26	9	54	19	214	77	0.42	0.15
6109	41	12	41	12	82	24	361	106	0.49	0.14
6110	34	11	36	12	70	22	357	114	0.58	0.19
n	5	5	5	5	5	5	5	5	5	5
Mean	35	11	35	12	71	23	312	100	0.53	0.17
S.D.	5	1	7	2	12	3	60	14	0.07	0.02

	Heart		Liver		Kidney-R		Kidney-L		Kidney-RL	
	AB	RE	AB	RE	AB	RE	AB	RE	AB	RE
Animal No.	g	g/100g	g	g/100g	g	g/100g	g	g/100g	g	g/100g
6106	0.99	0.32	7.18	2.32	1.14	0.37	1.19	0.39	2.33	0.75
6107	1.06	0.35	7.34	2.41	0.98	0.32	0.99	0.33	1.97	0.65
6108	0.79	0.29	6.51	2.35	0.82	0.30	0.94	0.34	1.76	0.64
6109	1.02	0.30	8.74	2.56	1.06	0.31	1.06	0.31	2.12	0.62
6110	1.02	0.33	6.97	2.23	0.97	0.31	0.91	0.29	1.88	0.60
n	5	5	5	5	5	5	5	5	5	5
Mean	0.98	0.32	7.35	2.37	0.99	0.32	1.02	0.33	2.01	0.65
S.D.	0.11	0.02	0.84	0.12	0.12	0.03	0.11	0.04	0.22	0.06

AB : Absolute weight, RE : Relative weight by body weight

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 8 - 30 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Organ weight Stage : End of recovery (non-mating group)

Sex : Female Dose : EES 50 mg/kg Species : Rat

	Ovary-R		Ovary-L		Ovary-RL		Uterus	
Animal No.	AB mg	RE mg/100g	AB mg	RE mg/100g	AB mg	RE mg/100g	AB mg	RE mg/100g
6106	54.4	17.6	51.8	16.8	106.2	34.4	434	140
6107	76.2	25.1	62.1	20.4	138.3	45.5	542	178
6108	34.0	12.3	39.5	14.3	73.5	26.5	683	247
6109	41.4	12.1	31.3	9.2	72.7	21.3	885	259
6110	44.0	14.1	36.4	11.7	80.4	25.8	592	190
n	5	5	5	5	5	5	5	5
Mean	50.0	16.2	44.2	14.5	94.2	30.7	627	203
S.D.	16.4	5.4	12.5	4.4	28.2	9.5	170	50

AB : Absolute weight, RE : Relative weight by body weight

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 9-1(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 1001 Male 0 mg/kg Day 43 End of administration

Gross pathology:

Kidney	Cyst: 1 present, left 2x2x1mm
Other tissues	Not remarkable

Histopathology:

Kidney	Cyst: minimal Basophilia,tubule: minimal, focal
Prostate	Cell infiltration,inflammatory: minimal

Following tissues : Not remarkable

Adrenal, Bone,femur, Bone marrow,femur, Cerebellum, Coagulating gland, Cerebrum
Epididymis, Eye, Heart, Intestine,duodenum, Intestine,jejunum
Intestine,ileum(including Peyer's patch), Intestine,cecum, Intestine,colon
Intestine,rectum, Lymph node,mesenteric, Lymph node,submandibular, Liver
Lung(including bronchus), Mammary gland,inguinal, Optic nerve, Parathyroid
Pancreas, Pituitary, Pons, Salivary gland,submandibular, Skin,inguinal
Sciatic nerve, Spleen, Stomach, Skeletal muscle,femoral, Seminal vesicle
Spinal cord,thoracic, Testis, Thymus, Trachea, Thyroid, Urinary bladder

Appendix 9-2(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 1002 Male 0 mg/kg Day 43 End of administration

Gross pathology:

All tissues	Not remarkable

Histopathology:

Heart	Cardiomyopathy,rodent progressive: minimal, focal
Liver	Cell infiltration,mononuclear: minimal
Prostate	Cell infiltration,inflammatory: minimal

Following tissues : Not remarkable

Adrenal, Bone,femur, Bone marrow,femur, Cerebellum, Coagulating gland, Cerebrum
Epididymis, Eye, Intestine,duodenum, Intestine,jejunum
Intestine,ileum(including Peyer's patch), Intestine,cecum, Intestine,colon
Intestine,rectum, Kidney, Lymph node,mesenteric, Lymph node,submandibular
Lung(including bronchus), Mammary gland,inguinal, Optic nerve, Parathyroid
Pancreas, Pituitary, Pons, Salivary gland,submandibular, Skin,inguinal
Sciatic nerve, Spleen, Stomach, Skeletal muscle,femoral, Seminal vesicle
Spinal cord,thoracic, Testis, Thymus, Trachea, Thyroid, Urinary bladder

Appendix 9-3(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 1003 Male 0 mg/kg Day 43 End of administration

Gross pathology:

All tissues	Not remarkable

Histopathology:

Liver	Cell infiltration,mononuclear: minimal
Prostate	Cell infiltration,inflammatory: minimal

Following tissues : Not remarkable

Adrenal, Bone,femur, Bone marrow,femur, Cerebellum, Coagulating gland, Cerebrum
Epididymis, Eye, Heart, Intestine,duodenum, Intestine,jejunum
Intestine,ileum(including Peyer's patch), Intestine,cecum, Intestine,colon
Intestine,rectum, Kidney, Lymph node,mesenteric, Lymph node,submandibular
Lung(including bronchus), Mammary gland,inguinal, Optic nerve, Parathyroid
Pancreas, Pituitary, Pons, Salivary gland,submandibular, Skin,inguinal
Sciatic nerve, Spleen, Stomach, Skeletal muscle,femoral, Seminal vesicle
Spinal cord,thoracic, Testis, Thymus, Trachea, Thyroid, Urinary bladder

Appendix 9-4(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 1004 Male 0 mg/kg Day 43 End of administration

Gross pathology:

All tissues	Not remarkable

Histopathology:

Liver	Cell infiltration,mononuclear: minimal

Following tissues : Not remarkable

Adrenal, Bone,femur, Bone marrow,femur, Cerebellum, Coagulating gland, Cerebrum
Epididymis, Eye, Heart, Intestine,duodenum, Intestine,jejunum
Intestine,ileum(including Peyer's patch), Intestine,cecum, Intestine,colon
Intestine,rectum, Kidney, Lymph node,mesenteric, Lymph node,submandibular
Lung(including bronchus), Mammary gland,inguinal, Optic nerve, Parathyroid
Pancreas, Pituitary, Pons, Prostate, Salivary gland,submandibular, Skin,inguinal
Sciatic nerve, Spleen, Stomach, Skeletal muscle,femoral, Seminal vesicle
Spinal cord,thoracic, Testis, Thymus, Trachea, Thyroid, Urinary bladder

Appendix 9-5(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 1005 Male 0 mg/kg Day 43 End of administration

Gross pathology:

All tissues	Not remarkable

Histopathology:

Heart	Cardiomyopathy,rodent progressive: minimal, focal
Lung(including bronchus)	Mineralization,wall,artery: minimal
Prostate	Cell infiltration,inflammatory: minimal

Following tissues : Not remarkable

Adrenal, Bone,femur, Bone marrow,femur, Cerebellum, Coagulating gland, Cerebrum
Epididymis, Eye, Intestine,duodenum, Intestine,jejunum
Intestine,ileum(including Peyer's patch), Intestine,cecum, Intestine,colon
Intestine,rectum, Kidney, Lymph node,mesenteric, Lymph node,submandibular, Liver
Mammary gland,inguinal, Optic nerve, Parathyroid, Pancreas, Pituitary, Pons
Salivary gland,submandibular, Skin,inguinal, Sciatic nerve, Spleen, Stomach
Skeletal muscle,femoral, Seminal vesicle, Spinal cord,thoracic, Testis, Thymus
Trachea, Thyroid, Urinary bladder

Appendix 9-6(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 1006 Male 0 mg/kg Day 43 End of administration

Gross pathology:

All tissues Not remarkable

Histopathology:

No tissues examined

Appendix 9-7(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 1007 Male 0 mg/kg Day 43 End of administration

Gross pathology:

All tissues Not remarkable

Histopathology:

No tissues examined

Appendix 9-8(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 1008 Male 0 mg/kg Day 57 End of recovery

Gross pathology:

All tissues	Not remarkable

Histopathology:

Liver	Cell infiltration,mononuclear: minimal
Prostate	Cell infiltration,inflammatory: minimal

Following tissues : Not remarkable

Adrenal, Bone,femur, Bone marrow,femur, Cerebellum, Coagulating gland, Cerebrum
Epididymis, Eye, Heart, Intestine,duodenum, Intestine,jejunum
Intestine,ileum(including Peyer's patch), Intestine,cecum, Intestine,colon
Intestine,rectum, Kidney, Lymph node,mesenteric, Lymph node,submandibular
Lung(including bronchus), Mammary gland,inguinal, Optic nerve, Parathyroid
Pancreas, Pituitary, Pons, Salivary gland,submandibular, Skin,inguinal
Sciatic nerve, Spleen, Stomach, Skeletal muscle,femoral, Seminal vesicle
Spinal cord,thoracic, Testis, Thymus, Trachea, Thyroid, Urinary bladder

Appendix 9-9(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 1009 Male 0 mg/kg Day 57 End of recovery

Gross pathology:

All tissues	Not remarkable

Histopathology:

Kidney	Cell infiltration,mononuclear: minimal, focal
Liver	Cell infiltration,mononuclear: minimal
Prostate	Cell infiltration,inflammatory: minimal

Following tissues : Not remarkable

Adrenal, Bone,femur, Bone marrow,femur, Cerebellum, Coagulating gland, Cerebrum
Epididymis, Eye, Heart, Intestine,duodenum, Intestine,jejunum
Intestine,ileum(including Peyer's patch), Intestine,cecum, Intestine,colon
Intestine,rectum, Lymph node,mesenteric, Lymph node,submandibular
Lung(including bronchus), Mammary gland,inguinal, Optic nerve, Parathyroid
Pancreas, Pituitary, Pons, Salivary gland,submandibular, Skin,inguinal
Sciatic nerve, Spleen, Stomach, Skeletal muscle,femoral, Seminal vesicle
Spinal cord,thoracic, Testis, Thymus, Trachea, Thyroid, Urinary bladder

Appendix 9-10(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 1010 Male 0 mg/kg Day 57 End of recovery

Gross pathology:

Stomach	Focus,dark red,glandular stomach: 1 present 2x1mm
Other tissues	Not remarkable

Histopathology:

Epididymis	Cell infiltration,mononuclear: minimal, unilateral
Kidney	Cast,erythrocytic: minimal
Prostate	Cell infiltration,inflammatory: minimal
Stomach	Erosion/ulcer,glandular stomach: minimal

Following tissues : Not remarkable

Adrenal, Bone,femur, Bone marrow,femur, Cerebellum, Coagulating gland, Cerebrum
Eye, Heart, Intestine,duodenum, Intestine,jejunum
Intestine,ileum(including Peyer's patch), Intestine,cecum, Intestine,colon
Intestine,rectum, Lymph node,mesenteric, Lymph node,submandibular, Liver
Lung(including bronchus), Mammary gland,inguinal, Optic nerve, Parathyroid
Pancreas, Pituitary, Pons, Salivary gland,submandibular, Skin,inguinal
Sciatic nerve, Spleen, Skeletal muscle,femoral, Seminal vesicle
Spinal cord,thoracic, Testis, Thymus, Trachea, Thyroid, Urinary bladder

Appendix 9-11(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 1011 Male 0 mg/kg Day 57 End of recovery

Gross pathology:

All tissues	Not remarkable

Histopathology:

Kidney	Cast,hyaline: minimal
Lung(including bronchus)	Cell infiltration,inflammatory: minimal, focal
Prostate	Cell infiltration,inflammatory: minimal

Following tissues : Not remarkable

Adrenal, Bone,femur, Bone marrow,femur, Cerebellum, Coagulating gland, Cerebrum
Epididymis, Eye, Heart, Intestine,duodenum, Intestine,jejunum
Intestine,ileum(including Peyer's patch), Intestine,cecum, Intestine,colon
Intestine,rectum, Lymph node,mesenteric, Lymph node,submandibular, Liver
Mammary gland,inguinal, Optic nerve, Parathyroid, Pancreas, Pituitary, Pons
Salivary gland,submandibular, Skin,inguinal, Sciatic nerve, Spleen, Stomach
Skeletal muscle,femoral, Seminal vesicle, Spinal cord,thoracic, Testis, Thymus
Trachea, Thyroid, Urinary bladder

Appendix 9-12(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 1012 Male 0 mg/kg Day 57 End of recovery

Gross pathology:

All tissues	Not remarkable

Histopathology:

Kidney	Basophilia,tubule: minimal, focal
Liver	Cell infiltration,mononuclear: minimal
Prostate	Cell infiltration,inflammatory: minimal

Following tissues : Not remarkable

Adrenal, Bone,femur, Bone marrow,femur, Cerebellum, Coagulating gland, Cerebrum
Epididymis, Eye, Heart, Intestine,duodenum, Intestine,jejunum
Intestine,ileum(including Peyer's patch), Intestine,cecum, Intestine,colon
Intestine,rectum, Lymph node,mesenteric, Lymph node,submandibular
Lung(including bronchus), Mammary gland,inguinal, Optic nerve, Parathyroid
Pancreas, Pituitary, Pons, Salivary gland,submandibular, Skin,inguinal
Sciatic nerve, Spleen, Stomach, Skeletal muscle,femoral, Seminal vesicle
Spinal cord,thoracic, Testis, Thymus, Trachea, Thyroid, Urinary bladder

Appendix 9-13(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 2001 Male 5 mg/kg Day 43 End of administration

Gross pathology:

All tissues Not remarkable

Histopathology:

No tissues examined

Appendix 9-14(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 2002 Male 5 mg/kg Day 43 End of administration

Gross pathology:

All tissues Not remarkable

Histopathology:

No tissues examined

Appendix 9-15(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 2003 Male 5 mg/kg Day 43 End of administration

Gross pathology:

All tissues Not remarkable

Histopathology:

No tissues examined

Appendix 9-16(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 2004 Male 5 mg/kg Day 43 End of administration

Gross pathology:

All tissues Not remarkable

Histopathology:

No tissues examined

Appendix 9-17(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 2005 Male 5 mg/kg Day 43 End of administration

Gross pathology:

All tissues Not remarkable

Histopathology:

No tissues examined

Appendix 9-18(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 2006 Male 5 mg/kg Day 43 End of administration

Gross pathology:

All tissues Not remarkable

Histopathology:

No tissues examined

Appendix 9-19(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 2007 Male 5 mg/kg Day 43 End of administration

Gross pathology:

All tissues Not remarkable

Histopathology:

No tissues examined

Appendix 9-20(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 2008 Male 5 mg/kg Day 43 End of administration

Gross pathology:

All tissues Not remarkable

Histopathology:

No tissues examined

Appendix 9-21(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 2009 Male 5 mg/kg Day 43 End of administration

Gross pathology:

All tissues Not remarkable

Histopathology:

No tissues examined

Appendix 9-22(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 2010 Male 5 mg/kg Day 43 End of administration

Gross pathology:

All tissues Not remarkable

Histopathology:

No tissues examined

Appendix 9-23(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 2011 Male 5 mg/kg Day 43 End of administration

Gross pathology:

All tissues Not remarkable

Histopathology:

No tissues examined

Appendix 9-24(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 2012 Male 5 mg/kg Day 43 End of administration

Gross pathology:

All tissues Not remarkable

Histopathology:

No tissues examined

Appendix 9-25(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 3001 Male 15 mg/kg Day 43 End of administration

Gross pathology:

All tissues Not remarkable

Histopathology:

No tissues examined

Appendix 9-26(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 3002 Male 15 mg/kg Day 43 End of administration

Gross pathology:

All tissues Not remarkable

Histopathology:

No tissues examined

Appendix 9-27(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 3003 Male 15 mg/kg Day 43 End of administration

Gross pathology:

All tissues Not remarkable

Histopathology:

No tissues examined

Appendix 9-28(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 3004 Male 15 mg/kg Day 43 End of administration

Gross pathology:

All tissues Not remarkable

Histopathology:

No tissues examined

Appendix 9-29(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 3005 Male 15 mg/kg Day 43 End of administration

Gross pathology:

All tissues Not remarkable

Histopathology:

No tissues examined

Appendix 9-30(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 3006 Male 15 mg/kg Day 43 End of administration

Gross pathology:

All tissues Not remarkable

Histopathology:

No tissues examined

Appendix 9-31(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 3007 Male 15 mg/kg Day 43 End of administration

Gross pathology:

All tissues Not remarkable

Histopathology:

No tissues examined

Appendix 9-32(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 3008 Male 15 mg/kg Day 43 End of administration

Gross pathology:

All tissues Not remarkable

Histopathology:

No tissues examined

Appendix 9-33(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 3009 Male 15 mg/kg Day 43 End of administration

Gross pathology:

All tissues Not remarkable

Histopathology:

No tissues examined

Appendix 9-34(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 3010 Male 15 mg/kg Day 43 End of administration

Gross pathology:

All tissues Not remarkable

Histopathology:

No tissues examined

Appendix 9-35(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 3011 Male 15 mg/kg Day 43 End of administration

Gross pathology:

Testis	Aplasia,unilateral: right
Other tissues	Not remarkable

Histopathology:

No tissues examined

Appendix 9-36(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 3012 Male 15 mg/kg Day 43 End of administration

Gross pathology:

All tissues Not remarkable

Histopathology:

No tissues examined

Appendix 9-37(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 4001 Male 50 mg/kg Day 43 End of administration

Gross pathology:

All tissues	Not remarkable

Histopathology:

Liver	Cell infiltration,mononuclear: minimal
Prostate	Cell infiltration,inflammatory: minimal

Following tissues : Not remarkable

Adrenal, Bone,femur, Bone marrow,femur, Cerebellum, Coagulating gland, Cerebrum
Epididymis, Eye, Heart, Intestine,duodenum, Intestine,jejunum
Intestine,ileum(including Peyer's patch), Intestine,cecum, Intestine,colon
Intestine,rectum, Kidney, Lymph node,mesenteric, Lymph node,submandibular
Lung(including bronchus), Mammary gland,inguinal, Optic nerve, Parathyroid
Pancreas, Pituitary, Pons, Salivary gland,submandibular, Skin,inguinal
Sciatic nerve, Spleen, Stomach, Skeletal muscle,femoral, Seminal vesicle
Spinal cord,thoracic, Testis, Thymus, Trachea, Thyroid, Urinary bladder

Appendix 9-38(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 4002 Male 50 mg/kg Day 43 End of administration

Gross pathology:

All tissues	Not remarkable

Histopathology:

Heart	Cardiomyopathy,rodent progressive: minimal, focal
Kidney	Basophilia,tubule: minimal, focal

Following tissues : Not remarkable

Adrenal, Bone,femur, Bone marrow,femur, Cerebellum, Coagulating gland, Cerebrum
Epididymis, Eye, Intestine,duodenum, Intestine,jejunum
Intestine,ileum(including Peyer's patch), Intestine,cecum, Intestine,colon
Intestine,rectum, Lymph node,mesenteric, Lymph node,submandibular, Liver
Lung(including bronchus), Mammary gland,inguinal, Optic nerve, Parathyroid
Pancreas, Pituitary, Pons, Prostate, Salivary gland,submandibular, Skin,inguinal
Sciatic nerve, Spleen, Stomach, Skeletal muscle,femoral, Seminal vesicle
Spinal cord,thoracic, Testis, Thymus, Trachea, Thyroid, Urinary bladder

Appendix 9-39(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 4003 Male 50 mg/kg Day 43 End of administration

Gross pathology:

All tissues	Not remarkable

Histopathology:

Heart	Cardiomyopathy,rodent progressive: minimal, focal
Kidney	Cell infiltration,mononuclear: minimal, focal
Lung(including bronchus)	Metaplasia,osseous: minimal, focal
Prostate	Cell infiltration,inflammatory: minimal

Following tissues : Not remarkable

Adrenal, Bone,femur, Bone marrow,femur, Cerebellum, Coagulating gland, Cerebrum
Epididymis, Eye, Intestine,duodenum, Intestine,jejunum
Intestine,ileum(including Peyer's patch), Intestine,cecum, Intestine,colon
Intestine,rectum, Lymph node,mesenteric, Lymph node,submandibular, Liver
Mammary gland,inguinal, Optic nerve, Parathyroid, Pancreas, Pituitary, Pons
Salivary gland,submandibular, Skin,inguinal, Sciatic nerve, Spleen, Stomach
Skeletal muscle,femoral, Seminal vesicle, Spinal cord,thoracic, Testis, Thymus
Trachea, Thyroid, Urinary bladder

Appendix 9-40(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 4004 Male 50 mg/kg Day 43 End of administration

Gross pathology:

All tissues	Not remarkable

Histopathology:

Kidney	Basophilia,tubule: minimal, focal
Liver	Cell infiltration,mononuclear: minimal
Prostate	Cell infiltration,inflammatory: minimal

Following tissues : Not remarkable

Adrenal, Bone,femur, Bone marrow,femur, Cerebellum, Coagulating gland, Cerebrum
Epididymis, Eye, Heart, Intestine,duodenum, Intestine,jejunum
Intestine,ileum(including Peyer's patch), Intestine,cecum, Intestine,colon
Intestine,rectum, Lymph node,mesenteric, Lymph node,submandibular
Lung(including bronchus), Mammary gland,inguinal, Optic nerve, Parathyroid
Pancreas, Pituitary, Pons, Salivary gland,submandibular, Skin,inguinal
Sciatic nerve, Spleen, Stomach, Skeletal muscle,femoral, Seminal vesicle
Spinal cord,thoracic, Testis, Thymus, Trachea, Thyroid, Urinary bladder

Appendix 9-41(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 4005 Male 50 mg/kg Day 43 End of administration

Gross pathology:

All tissues	Not remarkable

Histopathology:

Heart	Cardiomyopathy,rodent progressive: minimal, focal
Liver	Cell infiltration,mononuclear: minimal
Pancreas	Cell infiltration,mononuclear: minimal, focal
Prostate	Cell infiltration,inflammatory: minimal

Following tissues : Not remarkable

Adrenal, Bone,femur, Bone marrow,femur, Cerebellum, Coagulating gland, Cerebrum
Epididymis, Eye, Intestine,duodenum, Intestine,jejunum
Intestine,ileum(including Peyer's patch), Intestine,cecum, Intestine,colon
Intestine,rectum, Kidney, Lymph node,mesenteric, Lymph node,submandibular
Lung(including bronchus), Mammary gland,inguinal, Optic nerve, Parathyroid
Pituitary, Pons, Salivary gland,submandibular, Skin,inguinal, Sciatic nerve
Spleen, Stomach, Skeletal muscle,femoral, Seminal vesicle, Spinal cord,thoracic
Testis, Thymus, Trachea, Thyroid, Urinary bladder

Appendix 9-42(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 4006 Male 50 mg/kg Day 43 End of administration

Gross pathology:

All tissues Not remarkable

Histopathology:

No tissues examined

Appendix 9-43(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 4007 Male 50 mg/kg Day 43 End of administration

Gross pathology:

All tissues Not remarkable

Histopathology:

No tissues examined

Appendix 9-44(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 4008 Male 50 mg/kg Day 57 End of recovery

Gross pathology:

All tissues	Not remarkable

Histopathology:

Heart	Cardiomyopathy,rodent progressive: minimal, focal
Kidney	Cell infiltration,mononuclear: minimal, focal
Liver	Cell infiltration,mononuclear: minimal
Prostate	Cell infiltration,inflammatory: minimal

Following tissues : Not remarkable

Adrenal, Bone,femur, Bone marrow,femur, Cerebellum, Coagulating gland, Cerebrum
Epididymis, Eye, Intestine,duodenum, Intestine,jejunum
Intestine,ileum(including Peyer's patch), Intestine,cecum, Intestine,colon
Intestine,rectum, Lymph node,mesenteric, Lymph node,submandibular
Lung(including bronchus), Mammary gland,inguinal, Optic nerve, Parathyroid
Pancreas, Pituitary, Pons, Salivary gland,submandibular, Skin,inguinal
Sciatic nerve, Spleen, Stomach, Skeletal muscle,femoral, Seminal vesicle
Spinal cord,thoracic, Testis, Thymus, Trachea, Thyroid, Urinary bladder

Appendix 9-45(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 4009 Male 50 mg/kg Day 57 End of recovery

Gross pathology:

All tissues	Not remarkable

Histopathology:

Epididymis	Cell infiltration,mononuclear: minimal, unilateral
Kidney	Cell infiltration,mononuclear: minimal, focal
Liver	Cell infiltration,mononuclear: minimal
Lung(including bronchus)	Cell infiltration,inflammatory: minimal, focal
Prostate	Cell infiltration,inflammatory: minimal

Following tissues : Not remarkable

Adrenal, Bone,femur, Bone marrow,femur, Cerebellum, Coagulating gland, Cerebrum
Eye, Heart, Intestine,duodenum, Intestine,jejunum
Intestine,ileum(including Peyer's patch), Intestine,cecum, Intestine,colon
Intestine,rectum, Lymph node,mesenteric, Lymph node,submandibular
Mammary gland,inguinal, Optic nerve, Parathyroid, Pancreas, Pituitary, Pons
Salivary gland,submandibular, Skin,inguinal, Sciatic nerve, Spleen, Stomach
Skeletal muscle,femoral, Seminal vesicle, Spinal cord,thoracic, Testis, Thymus
Trachea, Thyroid, Urinary bladder

Appendix 9-46(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 4010 Male 50 mg/kg Day 57 End of recovery

Gross pathology:

All tissues	Not remarkable

Histopathology:

Prostate	Cell infiltration,inflammatory: minimal

Following tissues : Not remarkable

Adrenal, Bone,femur, Bone marrow,femur, Cerebellum, Coagulating gland, Cerebrum
Epididymis, Eye, Heart, Intestine,duodenum, Intestine,jejunum
Intestine,ileum(including Peyer's patch), Intestine,cecum, Intestine,colon
Intestine,rectum, Kidney, Lymph node,mesenteric, Lymph node,submandibular, Liver
Lung(including bronchus), Mammary gland,inguinal, Optic nerve, Parathyroid
Pancreas, Pituitary, Pons, Salivary gland,submandibular, Skin,inguinal
Sciatic nerve, Spleen, Stomach, Skeletal muscle,femoral, Seminal vesicle
Spinal cord,thoracic, Testis, Thymus, Trachea, Thyroid, Urinary bladder

Appendix 9-47(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 4011 Male 50 mg/kg Day 57 End of recovery

Gross pathology:

All tissues	Not remarkable

Histopathology:

Liver	Cell infiltration,mononuclear: minimal
Prostate	Cell infiltration,inflammatory: mild

Following tissues : Not remarkable

Adrenal, Bone,femur, Bone marrow,femur, Cerebellum, Coagulating gland, Cerebrum
Epididymis, Eye, Heart, Intestine,duodenum, Intestine,jejunum
Intestine,ileum(including Peyer's patch), Intestine,cecum, Intestine,colon
Intestine,rectum, Kidney, Lymph node,mesenteric, Lymph node,submandibular
Lung(including bronchus), Mammary gland,inguinal, Optic nerve, Parathyroid
Pancreas, Pituitary, Pons, Salivary gland,submandibular, Skin,inguinal
Sciatic nerve, Spleen, Stomach, Skeletal muscle,femoral, Seminal vesicle
Spinal cord,thoracic, Testis, Thymus, Trachea, Thyroid, Urinary bladder

Appendix 9-48(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 4012 Male 50 mg/kg Day 57 End of recovery

Gross pathology:

All tissues	Not remarkable

Histopathology:

Heart	Cardiomyopathy,rodent progressive: minimal, focal
Liver	Cell infiltration,mononuclear: minimal
Prostate	Cell infiltration,inflammatory: minimal

Following tissues : Not remarkable

Adrenal, Bone,femur, Bone marrow,femur, Cerebellum, Coagulating gland, Cerebrum
Epididymis, Eye, Intestine,duodenum, Intestine,jejunum
Intestine,ileum(including Peyer's patch), Intestine,cecum, Intestine,colon
Intestine,rectum, Kidney, Lymph node,mesenteric, Lymph node,submandibular
Lung(including bronchus), Mammary gland,inguinal, Optic nerve, Parathyroid
Pancreas, Pituitary, Pons, Salivary gland,submandibular, Skin,inguinal
Sciatic nerve, Spleen, Stomach, Skeletal muscle,femoral, Seminal vesicle
Spinal cord,thoracic, Testis, Thymus, Trachea, Thyroid, Urinary bladder

Appendix 9-49(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 1101 Female 0 mg/kg Day 54 End of administration,Dams

Gross pathology:

All tissues Not remarkable

Histopathology:

Lung(including bronchus) Mineralization,wall,artery: minimal

Following tissues : Not remarkable

Adrenal, Bone,femur, Bone marrow,femur, Cerebellum, Cerebrum, Eye, Heart
Intestine,duodenum, Intestine,jejunum, Intestine,ileum(including Peyer's patch)
Intestine,cecum, Intestine,colon, Intestine,rectum, Kidney
Lymph node,mesenteric, Lymph node,submandibular, Liver, Mammary gland,inguinal
Optic nerve, Ovary, Parathyroid, Pancreas, Pituitary, Pons
Salivary gland,submandibular, Skin,inguinal, Sciatic nerve, Spleen, Stomach
Skeletal muscle,femoral, Spinal cord,thoracic, Thymus, Trachea, Thyroid
Urinary bladder, Uterus, Vagina

Appendix 9-50(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 1102 Female 0 mg/kg Day 52 End of administration,Dams

Gross pathology:

All tissues	Not remarkable

Histopathology:

Eye	Retinal rosette: minimal
Liver	Cell infiltration,mononuclear: minimal

Following tissues : Not remarkable

Adrenal, Bone,femur, Bone marrow,femur, Cerebellum, Cerebrum, Heart
Intestine,duodenum, Intestine,jejunum, Intestine,ileum(including Peyer's patch)
Intestine,cecum, Intestine,colon, Intestine,rectum, Kidney
Lymph node,mesenteric, Lymph node,submandibular, Lung(including bronchus)
Mammary gland,inguinal, Optic nerve, Ovary, Parathyroid, Pancreas, Pituitary
Pons, Salivary gland,submandibular, Skin,inguinal, Sciatic nerve, Spleen
Stomach, Skeletal muscle,femoral, Spinal cord,thoracic, Thymus, Trachea, Thyroid
Urinary bladder, Uterus, Vagina

Appendix 9-51(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 1103 Female 0 mg/kg Day 55 End of administration,Dams

Gross pathology:

Stomach	Focus,dark red,glandular stomach: 2 present 1x1mm and 3x1mm
Other tissues	Not remarkable

Histopathology:

No tissues examined

Appendix 9-52(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 1104 Female 0 mg/kg Day 57 End of administration,Dams

Gross pathology:

All tissues Not remarkable

Histopathology:

No tissues examined

Appendix 9-53(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 1105 Female 0 mg/kg Day 55 End of administration,Dams

Gross pathology:

Stomach	Focus,dark red,glandular stomach: 1 present 3x1mm
Other tissues	Not remarkable

Histopathology:

No tissues examined

Appendix 9-54(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 1106 Female 0 mg/kg Day 52 End of administration,Dams

Gross pathology:

All tissues	Not remarkable

Histopathology:

Adrenal	Hypertrophy,cortex,focal: minimal
Parathyroid	No sample
Pancreas	Cell infiltration,mononuclear: minimal, focal

Following tissues : Not remarkable

Bone,femur, Bone marrow,femur, Cerebellum, Cerebrum, Eye, Heart
Intestine,duodenum, Intestine,jejunum, Intestine,ileum(including Peyer's patch)
Intestine,cecum, Intestine,colon, Intestine,rectum, Kidney
Lymph node,mesenteric, Lymph node,submandibular, Liver, Lung(including bronchus)
Mammary gland,inguinal, Optic nerve, Ovary, Pituitary, Pons
Salivary gland,submandibular, Skin,inguinal, Sciatic nerve, Spleen, Stomach
Skeletal muscle,femoral, Spinal cord,thoracic, Thymus, Trachea, Thyroid
Urinary bladder, Uterus, Vagina

Appendix 9-55(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 1107 Female 0 mg/kg Day 54 End of administration,Dams

Gross pathology:

All tissues Not remarkable

Histopathology:

No tissues examined

Appendix 9-56(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 1108 Female 0 mg/kg Day 54 End of administration,Dams

Gross pathology:

Stomach	Focus,dark red,glandular stomach: 1 present 11x1mm
Other tissues	Not remarkable

Histopathology:

No tissues examined

Appendix 9-57(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 1109 Female 0 mg/kg Day 52 End of administration,Dams

Gross pathology:

All tissues	Not remarkable

Histopathology:

Eye	Cell infiltration,conjunctiva: minimal, focal, inflammatory

Following tissues : Not remarkable

Adrenal, Bone,femur, Bone marrow,femur, Cerebellum, Cerebrum, Heart
Intestine,duodenum, Intestine,jejunum, Intestine,ileum(including Peyer's patch)
Intestine,cecum, Intestine,colon, Intestine,rectum, Kidney
Lymph node,mesenteric, Lymph node,submandibular, Liver, Lung(including bronchus)
Mammary gland,inguinal, Optic nerve, Ovary, Parathyroid, Pancreas, Pituitary
Pons, Salivary gland,submandibular, Skin,inguinal, Sciatic nerve, Spleen
Stomach, Skeletal muscle,femoral, Spinal cord,thoracic, Thymus, Trachea, Thyroid
Urinary bladder, Uterus, Vagina

Appendix 9-58(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 1110 Female 0 mg/kg Day 53 End of administration,Dams

Gross pathology:

Stomach	Focus,dark red,glandular stomach: 2 present each 1x1mm
Other tissues	Not remarkable

Histopathology:

Lung(including bronchus)	Mineralization,wall,artery: minimal Increased macrophage,alveolus: minimal, focal
Stomach	Erosion/ulcer,glandular stomach: minimal

Following tissues : Not remarkable

Adrenal, Bone,femur, Bone marrow,femur, Cerebellum, Cerebrum, Eye, Heart
Intestine,duodenum, Intestine,jejunum, Intestine,ileum(including Peyer's patch)
Intestine,cecum, Intestine,colon, Intestine,rectum, Kidney
Lymph node,mesenteric, Lymph node,submandibular, Liver, Mammary gland,inguinal
Optic nerve, Ovary, Parathyroid, Pancreas, Pituitary, Pons
Salivary gland,submandibular, Skin,inguinal, Sciatic nerve, Spleen
Skeletal muscle,femoral, Spinal cord,thoracic, Thymus, Trachea, Thyroid
Urinary bladder, Uterus, Vagina

Appendix 9-59(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 1111 Female 0 mg/kg Day 54 End of administration,Dams

Gross pathology:

All tissues Not remarkable

Histopathology:

No tissues examined

Appendix 9-60(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 1112 Female 0 mg/kg Day 41 Undelivered

Gross pathology:

All tissues	Not remarkable

Histopathology:

Liver	Cell infiltration,mononuclear: minimal

Following tissues : Not remarkable

Adrenal, Bone,femur, Bone marrow,femur, Cerebellum, Cerebrum, Eye, Heart
Intestine,duodenum, Intestine,jejunum, Intestine,ileum(including Peyer's patch)
Intestine,cecum, Intestine,colon, Intestine,rectum, Kidney
Lymph node,mesenteric, Lymph node,submandibular, Lung(including bronchus)
Mammary gland,inguinal, Optic nerve, Ovary, Parathyroid, Pancreas, Pituitary
Pons, Salivary gland,submandibular, Skin,inguinal, Sciatic nerve, Spleen
Stomach, Skeletal muscle,femoral, Spinal cord,thoracic, Thymus, Trachea, Thyroid
Urinary bladder, Uterus, Vagina

Appendix 9-61(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 2101 Female 5 mg/kg Day 53 End of administration,Dams

Gross pathology:

All tissues Not remarkable

Histopathology:

No tissues examined

Appendix 9-62(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 2102 Female 5 mg/kg Day 55 End of administration,Dams

Gross pathology:

All tissues Not remarkable

Histopathology:

No tissues examined

Appendix 9-63(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 2103 Female 5 mg/kg Day 53 End of administration,Dams

Gross pathology:

Stomach	Focus,dark red,glandular stomach: 1 present 1x2mm
Other tissues	Not remarkable

Histopathology:

No tissues examined

Appendix 9-64(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 2104 Female 5 mg/kg Day 52 End of administration,Dams

Gross pathology:

Lung(including bronchus)	Focus,dark red: many 2x2mm or less
Other tissues	Not remarkable

Histopathology:

No tissues examined

Appendix 9-65(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 2105 Female 5 mg/kg Day 53 End of administration,Dams

Gross pathology:

All tissues Not remarkable

Histopathology:

No tissues examined

Appendix 9-66(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 2106 Female 5 mg/kg Day 55 End of administration,Dams

Gross pathology:

Stomach	Focus,dark red,glandular stomach: 1 present 2x1mm
Other tissues	Not remarkable

Histopathology:

No tissues examined

Appendix 9-67(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 2107 Female 5 mg/kg Day 53 End of administration,Dams

Gross pathology:

Stomach	Focus,dark red,glandular stomach: 2 present 3x1mm and 2x1mm
Other tissues	Not remarkable

Histopathology:

No tissues examined

Appendix 9-68(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 2108 Female 5 mg/kg Day 54 End of administration,Dams

Gross pathology:

All tissues Not remarkable

Histopathology:

No tissues examined

Appendix 9-69(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 2109 Female 5 mg/kg Day 54 End of administration,Dams

Gross pathology:

All tissues Not remarkable

Histopathology:

No tissues examined

Appendix 9-70(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 2110 Female 5 mg/kg Day 52 End of administration,Dams

Gross pathology:

All tissues Not remarkable

Histopathology:

No tissues examined

Appendix 9-71(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 2111 Female 5 mg/kg Day 52 End of administration,Dams

Gross pathology:

All tissues Not remarkable

Histopathology:

No tissues examined

Appendix 9-72(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 2112 Female 5 mg/kg Day 52 End of administration,Dams

Gross pathology:

All tissues Not remarkable

Histopathology:

No tissues examined

Appendix 9-73(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 3101 Female 15 mg/kg Day 54 End of administration,Dams

Gross pathology:

All tissues Not remarkable

Histopathology:

No tissues examined

Appendix 9-74(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 3102 Female 15 mg/kg Day 54 Undelivered

Gross pathology:

All tissues Not remarkable

Histopathology:

Following tissues : Not remarkable

Adrenal, Bone,femur, Bone marrow,femur, Cerebellum, Cerebrum, Eye, Heart
Intestine,duodenum, Intestine,jejunum, Intestine,ileum(including Peyer's patch)
Intestine,cecum, Intestine,colon, Intestine,rectum, Kidney
Lymph node,mesenteric, Lymph node,submandibular, Liver, Lung(including bronchus)
Mammary gland,inguinal, Optic nerve, Ovary, Parathyroid, Pancreas, Pituitary
Pons, Salivary gland,submandibular, Skin,inguinal, Sciatic nerve, Spleen
Stomach, Skeletal muscle,femoral, Spinal cord,thoracic, Thymus, Trachea, Thyroid
Urinary bladder, Uterus, Vagina

Appendix 9-75(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 3103 Female 15 mg/kg Day 55 End of administration,Dams

Gross pathology:

All tissues Not remarkable

Histopathology:

No tissues examined

Appendix 9-76(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 3104 Female 15 mg/kg Day 54 End of administration,Dams

Gross pathology:

All tissues Not remarkable

Histopathology:

No tissues examined

Appendix 9-77(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 3105 Female 15 mg/kg Day 41 Undelivered

Gross pathology:

All tissues	Not remarkable

Histopathology:

Spleen	Extramedullary hematopoiesis,increased: minimal
Thymus	Fibrosis,focal: minimal

Following tissues : Not remarkable

Adrenal, Bone,femur, Bone marrow,femur, Cerebellum, Cerebrum, Eye, Heart
Intestine,duodenum, Intestine,jejunum, Intestine,ileum(including Peyer's patch)
Intestine,cecum, Intestine,colon, Intestine,rectum, Kidney
Lymph node,mesenteric, Lymph node,submandibular, Liver, Lung(including bronchus)
Mammary gland,inguinal, Optic nerve, Ovary, Parathyroid, Pancreas, Pituitary
Pons, Salivary gland,submandibular, Skin,inguinal, Sciatic nerve, Stomach
Skeletal muscle,femoral, Spinal cord,thoracic, Trachea, Thyroid, Urinary bladder
Uterus, Vagina

Appendix 9-78(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 3106 Female 15 mg/kg Day 52 End of administration,Dams

Gross pathology:

Stomach	Focus,dark red,glandular stomach: 1 present 3x1mm
Other tissues	Not remarkable

Histopathology:

No tissues examined

Appendix 9-79(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 3107 Female 15 mg/kg Day 52 End of administration,Dams

Gross pathology:

All tissues Not remarkable

Histopathology:

No tissues examined

Appendix 9-80(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 3108 Female 15 mg/kg Day 54 End of administration,Dams

Gross pathology:

All tissues Not remarkable

Histopathology:

No tissues examined

Appendix 9-81(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 3109 Female 15 mg/kg Day 52 End of administration,Dams

Gross pathology:

All tissues Not remarkable

Histopathology:

No tissues examined

Appendix 9-82(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 3110 Female 15 mg/kg Day 54 End of administration,Dams

Gross pathology:

All tissues Not remarkable

Histopathology:

No tissues examined

Appendix 9-83(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 3111 Female 15 mg/kg Day 52 End of administration,Dams

Gross pathology:

All tissues Not remarkable

Histopathology:

No tissues examined

Appendix 9-84(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 3112 Female 15 mg/kg Day 59 End of administration,Dams

Gross pathology:

All tissues Not remarkable

Histopathology:

No tissues examined

Appendix 9-85(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 4101 Female 50 mg/kg Day 54 End of administration,Dams

Gross pathology:

All tissues Not remarkable

Histopathology:

No tissues examined

Appendix 9-86(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 4102 Female 50 mg/kg Day 54 Undelivered

Gross pathology:

All tissues	Not remarkable

Histopathology:

Liver	Cell infiltration,mononuclear: minimal

Following tissues : Not remarkable

Adrenal, Bone,femur, Bone marrow,femur, Cerebellum, Cerebrum, Eye, Heart
Intestine,duodenum, Intestine,jejunum, Intestine,ileum(including Peyer's patch)
Intestine,cecum, Intestine,colon, Intestine,rectum, Kidney
Lymph node,mesenteric, Lymph node,submandibular, Lung(including bronchus)
Mammary gland,inguinal, Optic nerve, Ovary, Parathyroid, Pancreas, Pituitary
Pons, Salivary gland,submandibular, Skin,inguinal, Sciatic nerve, Spleen
Stomach, Skeletal muscle,femoral, Spinal cord,thoracic, Thymus, Trachea, Thyroid
Urinary bladder, Uterus, Vagina

Appendix 9-87(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 4103 Female 50 mg/kg Day 53 End of administration,Dams

Gross pathology:

All tissues	Not remarkable

Histopathology:

Kidney	Basophilia,tubule: minimal, focal
Lung(including bronchus)	Metaplasia,osseous: minimal, focal

Following tissues : Not remarkable

Adrenal, Bone,femur, Bone marrow,femur, Cerebellum, Cerebrum, Eye, Heart
Intestine,duodenum, Intestine,jejunum, Intestine,ileum(including Peyer's patch)
Intestine,cecum, Intestine,colon, Intestine,rectum, Lymph node,mesenteric
Lymph node,submandibular, Liver, Mammary gland,inguinal, Optic nerve, Ovary
Parathyroid, Pancreas, Pituitary, Pons, Salivary gland,submandibular
Skin,inguinal, Sciatic nerve, Spleen, Stomach, Skeletal muscle,femoral
Spinal cord,thoracic, Thymus, Trachea, Thyroid, Urinary bladder, Uterus, Vagina

Appendix 9-88(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 4104 Female 50 mg/kg Day 54 End of administration,Dams

Gross pathology:

All tissues Not remarkable

Histopathology:

No tissues examined

Appendix 9-89(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 4105 Female 50 mg/kg Day 53 End of administration,Dams

Gross pathology:

All tissues	Not remarkable

Histopathology:

Kidney	Cyst: minimal
Lung(including bronchus)	Cell infiltration,inflammatory: minimal, focal

Following tissues : Not remarkable

Adrenal, Bone,femur, Bone marrow,femur, Cerebellum, Cerebrum, Eye, Heart
Intestine,duodenum, Intestine,jejunum, Intestine,ileum(including Peyer's patch)
Intestine,cecum, Intestine,colon, Intestine,rectum, Lymph node,mesenteric
Lymph node,submandibular, Liver, Mammary gland,inguinal, Optic nerve, Ovary
Parathyroid, Pancreas, Pituitary, Pons, Salivary gland,submandibular
Skin,inguinal, Sciatic nerve, Spleen, Stomach, Skeletal muscle,femoral
Spinal cord,thoracic, Thymus, Trachea, Thyroid, Urinary bladder, Uterus, Vagina

Appendix 9-90(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 4106 Female 50 mg/kg Day 53 End of administration,Dams

Gross pathology:

All tissues	Not remarkable

Histopathology:

Lung(including bronchus)	Hemorrhage,focal: minimal

Following tissues : Not remarkable

Adrenal, Bone,femur, Bone marrow,femur, Cerebellum, Cerebrum, Eye, Heart
Intestine,duodenum, Intestine,jejunum, Intestine,ileum(including Peyer's patch)
Intestine,cecum, Intestine,colon, Intestine,rectum, Kidney
Lymph node,mesenteric, Lymph node,submandibular, Liver, Mammary gland,inguinal
Optic nerve, Ovary, Parathyroid, Pancreas, Pituitary, Pons
Salivary gland,submandibular, Skin,inguinal, Sciatic nerve, Spleen, Stomach
Skeletal muscle,femoral, Spinal cord,thoracic, Thymus, Trachea, Thyroid
Urinary bladder, Uterus, Vagina

Appendix 9-91(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 4107 Female 50 mg/kg Day 54 End of administration,Dams

Gross pathology:

All tissues Not remarkable

Histopathology:

No tissues examined

Appendix 9-92(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 4108 Female 50 mg/kg Day 53 End of administration,Dams

Gross pathology:

All tissues Not remarkable

Histopathology:

Following tissues : Not remarkable

Adrenal, Bone,femur, Bone marrow,femur, Cerebellum, Cerebrum, Eye, Heart
Intestine,duodenum, Intestine,jejunum, Intestine,ileum(including Peyer's patch)
Intestine,cecum, Intestine,colon, Intestine,rectum, Kidney
Lymph node,mesenteric, Lymph node,submandibular, Liver, Lung(including bronchus)
Mammary gland,inguinal, Optic nerve, Ovary, Parathyroid, Pancreas, Pituitary
Pons, Salivary gland,submandibular, Skin,inguinal, Sciatic nerve, Spleen
Stomach, Skeletal muscle,femoral, Spinal cord,thoracic, Thymus, Trachea, Thyroid
Urinary bladder, Uterus, Vagina

Appendix 9-93(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 4109 Female 50 mg/kg Day 54 End of administration,Dams

Gross pathology:

Stomach	Focus,dark red,glandular stomach: 1 present 1x1mm
Other tissues	Not remarkable

Histopathology:

No tissues examined

Appendix 9-94(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 4110 Female 50 mg/kg Day 55 End of administration,Dams

Gross pathology:

All tissues Not remarkable

Histopathology:

No tissues examined

Appendix 9-95(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 4111 Female 50 mg/kg Day 53 End of administration,Dams

Gross pathology:

All tissues Not remarkable

Histopathology:

No tissues examined

Appendix 9-96(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 4112 Female 50 mg/kg Day 52 End of administration,Dams

Gross pathology:

All tissues Not remarkable

Histopathology:

Following tissues : Not remarkable

Adrenal, Bone,femur, Bone marrow,femur, Cerebellum, Cerebrum, Eye, Heart
Intestine,duodenum, Intestine,jejunum, Intestine,ileum(including Peyer's patch)
Intestine,cecum, Intestine,colon, Intestine,rectum, Kidney
Lymph node,mesenteric, Lymph node,submandibular, Liver, Lung(including bronchus)
Mammary gland,inguinal, Optic nerve, Ovary, Parathyroid, Pancreas, Pituitary
Pons, Salivary gland,submandibular, Skin,inguinal, Sciatic nerve, Spleen
Stomach, Skeletal muscle,femoral, Spinal cord,thoracic, Thymus, Trachea, Thyroid
Urinary bladder, Uterus, Vagina

Appendix 9-97(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 5101 Female 0 mg/kg Day 43 End of administration

Gross pathology:

Stomach	Focus,dark red,glandular stomach: 1 present 1x1mm
Other tissues	Not remarkable

Histopathology:

Kidney	Basophilia,tubule: minimal, focal
Liver	Cell infiltration,mononuclear: minimal
Lung(including bronchus)	Mineralization,wall,artery: minimal
Stomach	Erosion/ulcer,glandular stomach: minimal

Following tissues : Not remarkable

Adrenal, Bone,femur, Bone marrow,femur, Cerebellum, Cerebrum, Eye, Heart
Intestine,duodenum, Intestine,jejunum, Intestine,ileum(including Peyer's patch)
Intestine,cecum, Intestine,colon, Intestine,rectum, Lymph node,mesenteric
Lymph node,submandibular, Mammary gland,inguinal, Optic nerve, Ovary
Parathyroid, Pancreas, Pituitary, Pons, Salivary gland,submandibular
Skin,inguinal, Sciatic nerve, Spleen, Skeletal muscle,femoral
Spinal cord,thoracic, Thymus, Trachea, Thyroid, Urinary bladder, Uterus, Vagina

Appendix 9-98(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 5102 Female 0 mg/kg Day 43 End of administration

Gross pathology:

All tissues	Not remarkable

Histopathology:

Liver	Cell infiltration,mononuclear: minimal

Following tissues : Not remarkable

Adrenal, Bone,femur, Bone marrow,femur, Cerebellum, Cerebrum, Eye, Heart
Intestine,duodenum, Intestine,jejunum, Intestine,ileum(including Peyer's patch)
Intestine,cecum, Intestine,colon, Intestine,rectum, Kidney
Lymph node,mesenteric, Lymph node,submandibular, Lung(including bronchus)
Mammary gland,inguinal, Optic nerve, Ovary, Parathyroid, Pancreas, Pituitary
Pons, Salivary gland,submandibular, Skin,inguinal, Sciatic nerve, Spleen
Stomach, Skeletal muscle,femoral, Spinal cord,thoracic, Thymus, Trachea, Thyroid
Urinary bladder, Uterus, Vagina

Appendix 9-99(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 5103 Female 0 mg/kg Day 43 End of administration

Gross pathology:

All tissues	Not remarkable

Histopathology:

Liver	Cell infiltration,mononuclear: minimal

Following tissues : Not remarkable

Adrenal, Bone,femur, Bone marrow,femur, Cerebellum, Cerebrum, Eye, Heart
Intestine,duodenum, Intestine,jejunum, Intestine,ileum(including Peyer's patch)
Intestine,cecum, Intestine,colon, Intestine,rectum, Kidney
Lymph node,mesenteric, Lymph node,submandibular, Lung(including bronchus)
Mammary gland,inguinal, Optic nerve, Ovary, Parathyroid, Pancreas, Pituitary
Pons, Salivary gland,submandibular, Skin,inguinal, Sciatic nerve, Spleen
Stomach, Skeletal muscle,femoral, Spinal cord,thoracic, Thymus, Trachea, Thyroid
Urinary bladder, Uterus, Vagina

Appendix 9-100(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 5104 Female 0 mg/kg Day 43 End of administration

Gross pathology:

All tissues Not remarkable

Histopathology:

Following tissues : Not remarkable

Adrenal, Bone,femur, Bone marrow,femur, Cerebellum, Cerebrum, Eye, Heart
Intestine,duodenum, Intestine,jejunum, Intestine,ileum(including Peyer's patch)
Intestine,cecum, Intestine,colon, Intestine,rectum, Kidney
Lymph node,mesenteric, Lymph node,submandibular, Liver, Lung(including bronchus)
Mammary gland,inguinal, Optic nerve, Ovary, Parathyroid, Pancreas, Pituitary
Pons, Salivary gland,submandibular, Skin,inguinal, Sciatic nerve, Spleen
Stomach, Skeletal muscle,femoral, Spinal cord,thoracic, Thymus, Trachea, Thyroid
Urinary bladder, Uterus, Vagina

Appendix 9-101(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 5105 Female 0 mg/kg Day 43 End of administration

Gross pathology:

All tissues	Not remarkable

Histopathology:

Liver	Cell infiltration,mononuclear: minimal

Following tissues : Not remarkable

Adrenal, Bone,femur, Bone marrow,femur, Cerebellum, Cerebrum, Eye, Heart
Intestine,duodenum, Intestine,jejunum, Intestine,ileum(including Peyer's patch)
Intestine,cecum, Intestine,colon, Intestine,rectum, Kidney
Lymph node,mesenteric, Lymph node,submandibular, Lung(including bronchus)
Mammary gland,inguinal, Optic nerve, Ovary, Parathyroid, Pancreas, Pituitary
Pons, Salivary gland,submandibular, Skin,inguinal, Sciatic nerve, Spleen
Stomach, Skeletal muscle,femoral, Spinal cord,thoracic, Thymus, Trachea, Thyroid
Urinary bladder, Uterus, Vagina

Appendix 9-102(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 5106 Female 0 mg/kg Day 57 End of recovery

Gross pathology:

All tissues	Not remarkable

Histopathology:

Liver	Cell infiltration,mononuclear: minimal

Following tissues : Not remarkable

Adrenal, Bone,femur, Bone marrow,femur, Cerebellum, Cerebrum, Eye, Heart
Intestine,duodenum, Intestine,jejunum, Intestine,ileum(including Peyer's patch)
Intestine,cecum, Intestine,colon, Intestine,rectum, Kidney
Lymph node,mesenteric, Lymph node,submandibular, Lung(including bronchus)
Mammary gland,inguinal, Optic nerve, Ovary, Parathyroid, Pancreas, Pituitary
Pons, Salivary gland,submandibular, Skin,inguinal, Sciatic nerve, Spleen
Stomach, Skeletal muscle,femoral, Spinal cord,thoracic, Thymus, Trachea, Thyroid
Urinary bladder, Uterus, Vagina

Appendix 9-103(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 5107 Female 0 mg/kg Day 57 End of recovery

Gross pathology:

All tissues	Not remarkable

Histopathology:

Parathyroid	Cell infiltration,mononuclear: minimal

Following tissues : Not remarkable

Adrenal, Bone,femur, Bone marrow,femur, Cerebellum, Cerebrum, Eye, Heart
Intestine,duodenum, Intestine,jejunum, Intestine,ileum(including Peyer's patch)
Intestine,cecum, Intestine,colon, Intestine,rectum, Kidney
Lymph node,mesenteric, Lymph node,submandibular, Liver, Lung(including bronchus)
Mammary gland,inguinal, Optic nerve, Ovary, Pancreas, Pituitary, Pons
Salivary gland,submandibular, Skin,inguinal, Sciatic nerve, Spleen, Stomach
Skeletal muscle,femoral, Spinal cord,thoracic, Thymus, Trachea, Thyroid
Urinary bladder, Uterus, Vagina

Appendix 9-104(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 5108 Female 0 mg/kg Day 57 End of recovery

Gross pathology:

All tissues Not remarkable

Histopathology:

Following tissues : Not remarkable

Adrenal, Bone,femur, Bone marrow,femur, Cerebellum, Cerebrum, Eye, Heart
Intestine,duodenum, Intestine,jejunum, Intestine,ileum(including Peyer's patch)
Intestine,cecum, Intestine,colon, Intestine,rectum, Kidney
Lymph node,mesenteric, Lymph node,submandibular, Liver, Lung(including bronchus)
Mammary gland,inguinal, Optic nerve, Ovary, Parathyroid, Pancreas, Pituitary
Pons, Salivary gland,submandibular, Skin,inguinal, Sciatic nerve, Spleen
Stomach, Skeletal muscle,femoral, Spinal cord,thoracic, Thymus, Trachea, Thyroid
Urinary bladder, Uterus, Vagina

Appendix 9-105(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 5109 Female 0 mg/kg Day 57 End of recovery

Gross pathology:

All tissues Not remarkable

Histopathology:

Kidney Calculus: minimal, pelvic

Following tissues : Not remarkable

Adrenal, Bone,femur, Bone marrow,femur, Cerebellum, Cerebrum, Eye, Heart
Intestine,duodenum, Intestine,jejunum, Intestine,ileum(including Peyer's patch)
Intestine,cecum, Intestine,colon, Intestine,rectum, Lymph node,mesenteric
Lymph node,submandibular, Liver, Lung(including bronchus)
Mammary gland,inguinal, Optic nerve, Ovary, Parathyroid, Pancreas, Pituitary
Pons, Salivary gland,submandibular, Skin,inguinal, Sciatic nerve, Spleen
Stomach, Skeletal muscle,femoral, Spinal cord,thoracic, Thymus, Trachea, Thyroid
Urinary bladder, Uterus, Vagina

Appendix 9-106(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 5110 Female 0 mg/kg Day 57 End of recovery

Gross pathology:

All tissues Not remarkable

Histopathology:

Eye Retinal rosette: minimal

Following tissues : Not remarkable

Adrenal, Bone,femur, Bone marrow,femur, Cerebellum, Cerebrum, Heart
Intestine,duodenum, Intestine,jejunum, Intestine,ileum(including Peyer's patch)
Intestine,cecum, Intestine,colon, Intestine,rectum, Kidney
Lymph node,mesenteric, Lymph node,submandibular, Liver, Lung(including bronchus)
Mammary gland,inguinal, Optic nerve, Ovary, Parathyroid, Pancreas, Pituitary
Pons, Salivary gland,submandibular, Skin,inguinal, Sciatic nerve, Spleen
Stomach, Skeletal muscle,femoral, Spinal cord,thoracic, Thymus, Trachea, Thyroid
Urinary bladder, Uterus, Vagina

Appendix 9-107(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 6101 Female 50 mg/kg Day 43 End of administration

Gross pathology:

All tissues Not remarkable

Histopathology:

Following tissues : Not remarkable

Adrenal, Bone,femur, Bone marrow,femur, Cerebellum, Cerebrum, Eye, Heart
Intestine,duodenum, Intestine,jejunum, Intestine,ileum(including Peyer's patch)
Intestine,cecum, Intestine,colon, Intestine,rectum, Kidney
Lymph node,mesenteric, Lymph node,submandibular, Liver, Lung(including bronchus)
Mammary gland,inguinal, Optic nerve, Ovary, Parathyroid, Pancreas, Pituitary
Pons, Salivary gland,submandibular, Skin,inguinal, Sciatic nerve, Spleen
Stomach, Skeletal muscle,femoral, Spinal cord,thoracic, Thymus, Trachea, Thyroid
Urinary bladder, Uterus, Vagina

Appendix 9-108(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 6102 Female 50 mg/kg Day 43 End of administration

Gross pathology:

All tissues	Not remarkable

Histopathology:

Kidney	Cell infiltration,mononuclear: minimal, focal
Liver	Cell infiltration,mononuclear: minimal

Following tissues : Not remarkable

Adrenal, Bone,femur, Bone marrow,femur, Cerebellum, Cerebrum, Eye, Heart
Intestine,duodenum, Intestine,jejunum, Intestine,ileum(including Peyer's patch)
Intestine,cecum, Intestine,colon, Intestine,rectum, Lymph node,mesenteric
Lymph node,submandibular, Lung(including bronchus), Mammary gland,inguinal
Optic nerve, Ovary, Parathyroid, Pancreas, Pituitary, Pons
Salivary gland,submandibular, Skin,inguinal, Sciatic nerve, Spleen, Stomach
Skeletal muscle,femoral, Spinal cord,thoracic, Thymus, Trachea, Thyroid
Urinary bladder, Uterus, Vagina

Appendix 9-109(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 6103 Female 50 mg/kg Day 43 End of administration

Gross pathology:

All tissues	Not remarkable

Histopathology:

Liver	Cell infiltration,mononuclear: minimal
Pancreas	Cell infiltration,mononuclear: minimal, focal

Following tissues : Not remarkable

Adrenal, Bone,femur, Bone marrow,femur, Cerebellum, Cerebrum, Eye, Heart
Intestine,duodenum, Intestine,jejunum, Intestine,ileum(including Peyer's patch)
Intestine,cecum, Intestine,colon, Intestine,rectum, Kidney
Lymph node,mesenteric, Lymph node,submandibular, Lung(including bronchus)
Mammary gland,inguinal, Optic nerve, Ovary, Parathyroid, Pituitary, Pons
Salivary gland,submandibular, Skin,inguinal, Sciatic nerve, Spleen, Stomach
Skeletal muscle,femoral, Spinal cord,thoracic, Thymus, Trachea, Thyroid
Urinary bladder, Uterus, Vagina

Appendix 9-110(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 6104 Female 50 mg/kg Day 43 End of administration

Gross pathology:

All tissues Not remarkable

Histopathology:

Following tissues : Not remarkable

Adrenal, Bone,femur, Bone marrow,femur, Cerebellum, Cerebrum, Eye, Heart
Intestine,duodenum, Intestine,jejunum, Intestine,ileum(including Peyer's patch)
Intestine,cecum, Intestine,colon, Intestine,rectum, Kidney
Lymph node,mesenteric, Lymph node,submandibular, Liver, Lung(including bronchus)
Mammary gland,inguinal, Optic nerve, Ovary, Parathyroid, Pancreas, Pituitary
Pons, Salivary gland,submandibular, Skin,inguinal, Sciatic nerve, Spleen
Stomach, Skeletal muscle,femoral, Spinal cord,thoracic, Thymus, Trachea, Thyroid
Urinary bladder, Uterus, Vagina

Appendix 9-111(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 6105 Female 50 mg/kg Day 43 End of administration

Gross pathology:

All tissues	Not remarkable

Histopathology:

Liver	Cell infiltration,mononuclear: minimal

Following tissues : Not remarkable

Adrenal, Bone,femur, Bone marrow,femur, Cerebellum, Cerebrum, Eye, Heart
Intestine,duodenum, Intestine,jejunum, Intestine,ileum(including Peyer's patch)
Intestine,cecum, Intestine,colon, Intestine,rectum, Kidney
Lymph node,mesenteric, Lymph node,submandibular, Lung(including bronchus)
Mammary gland,inguinal, Optic nerve, Ovary, Parathyroid, Pancreas, Pituitary
Pons, Salivary gland,submandibular, Skin,inguinal, Sciatic nerve, Spleen
Stomach, Skeletal muscle,femoral, Spinal cord,thoracic, Thymus, Trachea, Thyroid
Urinary bladder, Uterus, Vagina

Appendix 9-112(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 6106 Female 50 mg/kg Day 57 End of recovery

Gross pathology:

All tissues Not remarkable

Histopathology:

Following tissues : Not remarkable

Adrenal, Bone,femur, Bone marrow,femur, Cerebellum, Cerebrum, Eye, Heart
Intestine,duodenum, Intestine,jejunum, Intestine,ileum(including Peyer's patch)
Intestine,cecum, Intestine,colon, Intestine,rectum, Kidney
Lymph node,mesenteric, Lymph node,submandibular, Liver, Lung(including bronchus)
Mammary gland,inguinal, Optic nerve, Ovary, Parathyroid, Pancreas, Pituitary
Pons, Salivary gland,submandibular, Skin,inguinal, Sciatic nerve, Spleen
Stomach, Skeletal muscle,femoral, Spinal cord,thoracic, Thymus, Trachea, Thyroid
Urinary bladder, Uterus, Vagina

Appendix 9-113(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 6107 Female 50 mg/kg Day 57 End of recovery

Gross pathology:

All tissues	Not remarkable

Histopathology:

Liver	Cell infiltration,mononuclear: minimal
Parathyroid	No sample

Following tissues : Not remarkable

Adrenal, Bone,femur, Bone marrow,femur, Cerebellum, Cerebrum, Eye, Heart
Intestine,duodenum, Intestine,jejunum, Intestine,ileum(including Peyer's patch)
Intestine,cecum, Intestine,colon, Intestine,rectum, Kidney
Lymph node,mesenteric, Lymph node,submandibular, Lung(including bronchus)
Mammary gland,inguinal, Optic nerve, Ovary, Pancreas, Pituitary, Pons
Salivary gland,submandibular, Skin,inguinal, Sciatic nerve, Spleen, Stomach
Skeletal muscle,femoral, Spinal cord,thoracic, Thymus, Trachea, Thyroid
Urinary bladder, Uterus, Vagina

Appendix 9-114(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 6108 Female 50 mg/kg Day 57 End of recovery

Gross pathology:

All tissues Not remarkable

Histopathology:

Following tissues : Not remarkable

Adrenal, Bone,femur, Bone marrow,femur, Cerebellum, Cerebrum, Eye, Heart
Intestine,duodenum, Intestine,jejunum, Intestine,ileum(including Peyer's patch)
Intestine,cecum, Intestine,colon, Intestine,rectum, Kidney
Lymph node,mesenteric, Lymph node,submandibular, Liver, Lung(including bronchus)
Mammary gland,inguinal, Optic nerve, Ovary, Parathyroid, Pancreas, Pituitary
Pons, Salivary gland,submandibular, Skin,inguinal, Sciatic nerve, Spleen
Stomach, Skeletal muscle,femoral, Spinal cord,thoracic, Thymus, Trachea, Thyroid
Urinary bladder, Uterus, Vagina

Appendix 9-115(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 6109 Female 50 mg/kg Day 57 End of recovery

Gross pathology:

All tissues	Not remarkable

Histopathology:

Liver	Cell infiltration,mononuclear: minimal

Following tissues : Not remarkable

Adrenal, Bone,femur, Bone marrow,femur, Cerebellum, Cerebrum, Eye, Heart
Intestine,duodenum, Intestine,jejunum, Intestine,ileum(including Peyer's patch)
Intestine,cecum, Intestine,colon, Intestine,rectum, Kidney
Lymph node,mesenteric, Lymph node,submandibular, Lung(including bronchus)
Mammary gland,inguinal, Optic nerve, Ovary, Parathyroid, Pancreas, Pituitary
Pons, Salivary gland,submandibular, Skin,inguinal, Sciatic nerve, Spleen
Stomach, Skeletal muscle,femoral, Spinal cord,thoracic, Thymus, Trachea, Thyroid
Urinary bladder, Uterus, Vagina

Appendix 9-116(1/1) Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Individual gross and histopathological findings

Animal No. 6110 Female 50 mg/kg Day 57 End of recovery

Gross pathology:

All tissues Not remarkable

Histopathology:

Following tissues : Not remarkable

Adrenal, Bone,femur, Bone marrow,femur, Cerebellum, Cerebrum, Eye, Heart
Intestine,duodenum, Intestine,jejunum, Intestine,ileum(including Peyer's patch)
Intestine,cecum, Intestine,colon, Intestine,rectum, Kidney
Lymph node,mesenteric, Lymph node,submandibular, Liver, Lung(including bronchus)
Mammary gland,inguinal, Optic nerve, Ovary, Parathyroid, Pancreas, Pituitary
Pons, Salivary gland,submandibular, Skin,inguinal, Sciatic nerve, Spleen
Stomach, Skeletal muscle,femoral, Spinal cord,thoracic, Thymus, Trachea, Thyroid
Urinary bladder, Uterus, Vagina

Appendix 10 - 1

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Study No. : R-1244

Estrus cycles and copulation

Generation : F0

Dose : EES 0 mg/kg

Species : Rat

Animal No.	/Before mating (day) 1	2	3	4	5	6	7	8	9	10	11	12	13	14
1101	M	D	P	E	M	D	D	P	E	M	D	P	E	E
1102	E	M	D	P	E	M	D	P	E	M	D	P	E	M
1103	D	P	E	M	D	P	E	M	D	P	E	M	D	P
1104	E	M	D	P	E	M	D	P	E	M	D	P	E	M
1105	M	D	D	P	E	M	D	P	E	M	D	P	E	M
1106	D	P	E	M	D	P	E	M	D	D	P	E	M	D
1107	P	E	M	D	P	E	M	D	P	E	M	D	P	E
1108	P	E	M	D	P	E	M	D	P	E	M	D	P	E
1109	E	M	D	P	E	M	D	P	E	M	D	P	E	M
1110	P	E	M	D	D	P	E	M	D	D	P	E	M	D
1111	P	E	M	D	P	E	M	D	P	E	M	D	P	E
1112	E	M	D	D	P	E	M	D	D	P	E	M	D	D

P : Proestrus, E : Estrus, M : Metestrus, D : Diestrus, - : Smear was not sampled or missing value

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 10 - 2

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Estrus cycles and copulation

Study No. : R-1244

Generation : F0 Dose : EES 0 mg/kg Species : Rat

Animal No.	/Before mating (day) 15	Length of estrous cycle (days)			Mean	Number of estrus	Animal with abnormal estrous cycle
1101	M	5	4		4.5	3	-
1102	D	4	4	4	4.0	4	-
1103	E	4	4	4	4.0	4	-
1104	D	4	4	4	4.0	4	-
1105	D	4	4		4.0	3	-
1106	D	4	5		4.5	3	-
1107	M	4	4	4	4.0	4	-
1108	M	4	4	4	4.0	4	-
1109	D	4	4	4	4.0	4	-
1110	D	5	5		5.0	3	-
1111	M	4	4	4	4.0	4	-
1112	P	5	5		5.0	3	-

P : Proestrus, E : Estrus, M : Metestrus, D : Diestrus, - : Smear was not sampled or missing value

- : Animal with normal and regular cycle

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 10 - 3

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Study No. : R-1244

Estrus cycles and copulation

Generation : F0 Dose : EES 5 mg/kg Species : Rat

Animal No.	/Before mating (day) 1	2	3	4	5	6	7	8	9	10	11	12	13	14
2101	M	D	P	E	M	D	P	E	M	D	P	E	M	D
2102	D	P	E	M	D	P	E	M	D	P	E	M	D	P
2103	E	M	D	P	E	M	D	P	E	M	D	P	E	M
2104	P	E	M	D	P	E	E	M	D	P	E	E	M	D
2105	E	M	D	P	E	M	D	P	E	M	D	P	E	M
2106	P	E	M	D	P	E	E	M	D	P	E	E	M	D
2107	E	M	D	P	E	M	D	P	E	M	D	P	E	M
2108	P	E	M	D	P	E	M	D	P	E	M	D	P	E
2109	D	P	E	M	D	P	E	M	D	P	E	M	D	P
2110	M	D	P	E	M	D	P	E	M	D	P	E	M	D
2111	M	D	P	E	M	D	P	E	M	D	P	E	M	D
2112	M	D	P	E	M	D	P	E	M	D	P	E	M	D

P : Proestrus, E : Estrus, M : Metestrus, D : Diestrus, - : Smear was not sampled or missing value

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 10 - 4

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Estrus cycles and copulation

Study No. : R-1244

Generation : F0 Dose : EES 5 mg/kg Species : Rat

Animal No.	/Before mating (day) 15	Length of estrous cycle (days)			Mean	Number of estrus	Animal with abnormal estrous cycle
2101	P	4	4		4.0	3	-
2102	E	4	4	4	4.0	4	-
2103	D	4	4	4	4.0	4	-
2104	P	4	5		4.5	3	-
2105	D	4	4	4	4.0	4	-
2106	P	4	5		4.5	3	-
2107	D	4	4	4	4.0	4	-
2108	M	4	4	4	4.0	4	-
2109	E	4	4	4	4.0	4	-
2110	P	4	4		4.0	3	-
2111	P	4	4		4.0	3	-
2112	P	4	4		4.0	3	-

P : Proestrus, E : Estrus, M : Metestrus, D : Diestrus, - : Smear was not sampled or missing value

- : Animal with normal and regular cycle

EES: Ethyl ethyldimethyltetradecylammonium sulphate

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Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Study No. : R-1244

Estrus cycles and copulation

Generation : F0

Dose : EES 15 mg/kg

Species : Rat

Animal No.	/Before mating (day) 1	2	3	4	5	6	7	8	9	10	11	12	13	14
3101	P	E	M	D	P	E	M	D	P	E	M	D	P	E
3102	P	E	M	D	P	E	M	D	P	E	M	D	P	E
3103	D	P	E	M	D	P	E	M	D	P	E	M	D	P
3104	D	P	E	M	D	P	E	M	D	P	E	M	D	P
3105	E	M	D	P	E	M	D	P	E	E	M	D	P	E
3106	M	D	P	E	M	D	P	E	M	D	P	E	M	D
3107	E	M	D	P	E	M	D	P	E	M	D	P	E	M
3108	P	E	M	D	P	E	M	D	P	E	M	D	P	E
3109	M	D	P	E	M	D	P	E	M	D	P	E	M	D
3110	D	P	E	M	D	P	E	M	D	P	E	M	D	P
3111	D	P	E	M	D	P	E	M	D	P	E	E	M	D
3112	D	P	E	M	D	P	E	M	D	P	E	M	D	P

P : Proestrus, E : Estrus, M : Metestrus, D : Diestrus, - : Smear was not sampled or missing value

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 10 - 6

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Study No. : R-1244

Estrus cycles and copulation

Generation : F0 Dose : EES 15 mg/kg Species : Rat

Animal No.	/Before mating (day) 15	Length of estrous cycle (days)			Mean	Number of estrus	Animal with abnormal estrous cycle
3101	M	4	4	4	4.0	4	-
3102	M	4	4	4	4.0	4	-
3103	E	4	4	4	4.0	4	-
3104	E	4	4	4	4.0	4	-
3105	M	4	4	5	4.3	4	-
3106	P	4	4		4.0	3	-
3107	D	4	4	4	4.0	4	-
3108	M	4	4	4	4.0	4	-
3109	P	4	4		4.0	3	-
3110	E	4	4	4	4.0	4	-
3111	P	4	4		4.0	3	-
3112	E	4	4	4	4.0	4	-

P : Proestrus, E : Estrus, M : Metestrus, D : Diestrus, - : Smear was not sampled or missing value

- : Animal with normal and regular cycle

EES: Ethyl ethyldimethyltetradecylammonium sulphate

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Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Study No. : R-1244

Estrus cycles and copulation

Generation : F0

Dose : EES 50 mg/kg

Species : Rat

Animal No.	/Before mating (day) 1	2	3	4	5	6	7	8	9	10	11	12	13	14
4101	P	E	M	D	P	E	M	D	P	E	M	D	P	E
4102	P	E	M	D	P	E	M	D	D	P	E	M	D	D
4103	P	E	M	D	D	P	E	M	D	D	P	E	M	D
4104	P	E	M	D	P	E	M	D	P	E	M	D	P	E
4105	M	D	P	E	M	D	P	E	M	D	P	E	M	D
4106	E	M	D	P	E	M	D	P	E	M	D	P	E	M
4107	D	P	E	M	D	P	E	M	D	P	E	M	D	P
4108	P	E	M	D	P	E	M	D	P	E	M	D	P	E
4109	E	M	D	P	E	M	D	P	E	M	D	D	P	E
4110	D	P	E	M	D	P	E	M	D	P	E	M	D	P
4111	E	M	D	P	E	M	D	D	P	E	M	D	D	P
4112	M	D	P	E	M	D	P	E	M	D	P	E	M	D

P : Proestrus, E : Estrus, M : Metestrus, D : Diestrus, - : Smear was not sampled or missing value

EES: Ethyl ethyldimethyltetradecylammonium sulphate

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Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Study No. : R-1244

Estrus cycles and copulation

Generation : F0 Dose : EES 50 mg/kg Species : Rat

Animal No.	/Before mating (day) 15	Length of estrous cycle (days)			Mean	Number of estrus	Animal with abnormal estrous cycle
4101	M	4	4	4	4.0	4	-
4102	P	4	5		4.5	3	-
4103	D	5	5		5.0	3	-
4104	M	4	4	4	4.0	4	-
4105	P	4	4		4.0	3	-
4106	D	4	4	4	4.0	4	-
4107	E	4	4	4	4.0	4	-
4108	M	4	4	4	4.0	4	-
4109	M	4	4	5	4.3	4	-
4110	E	4	4	4	4.0	4	-
4111	E	4	5	5	4.3	4	-
4112	P	4	4		4.0	3	-

P : Proestrus, E : Estrus, M : Metestrus, D : Diestrus, - : Smear was not sampled or missing value

- : Animal with normal and regular cycle

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 11 - 1 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Reproductive performance

Generation : F0 Sex : Male Dose : EES 0 mg/kg Species : Rat

Animal No.	Elapsed day of conceiving	1st mating Paired animal	Copulation a)	Fertility b)
1001	3	1101	+	+
1002	2	1102	+	+
1003	4	1103	+	+
1004	6	1104	+	+
1005	4	1105	+	+
1006	1	1106	+	+
1007	3	1107	+	+
1008	3	1108	+	+
1009	2	1109	+	+
1010	2	1110	+	+
1011	3	1111	+	+
1012	1	1112	+	-
n	12		12	12
Mean	2.8			
S.D.	1.4			
No. of positives			12	11
%			100.0 c)	91.7 d)

/// : No need to input/measure
EES: Ethyl ethyldimethyltetradecylammonium sulphate
a) + : Copulation
b) + : Pregnancy, - : Non-pregnancy
c) : (Number of copulated animals / Number of mated animals)x 100
d) : (Number of males which impregnated females / Number of copulated males)x 100

Appendix 11 - 2 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Reproductive performance

Generation : F0 Sex : Male Dose : EES 5 mg/kg Species : Rat

Animal No.	Elapsed day of conceiving	1st mating Paired animal	Copulation a)	Fertility b)
2001	2	2101	+	+
2002	4	2102	+	+
2003	2	2103	+	+
2004	1	2104	+	+
2005	2	2105	+	+
2006	3	2106	+	+
2007	2	2107	+	+
2008	3	2108	+	+
2009	4	2109	+	+
2010	1	2110	+	+
2011	1	2111	+	+
2012	1	2112	+	+
n	12		12	12
Mean	2.2			
S.D.	1.1			
No. of positives			12	12
%			100.0 c)	100.0 d)

/// : No need to input/measure
EES: Ethyl ethyldimethyltetradecylammonium sulphate
a) + : Copulation
b) + : Pregnancy
c) : (Number of copulated animals / Number of mated animals)x 100
d) : (Number of males which impregnated females / Number of copulated males)x 100

Appendix 11 - 3 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Reproductive performance

Generation : F0 Sex : Male Dose : EES 15 mg/kg Species : Rat

Animal No.	Elapsed day of conceiving a)	1st mating Paired animal	Copulation b)	Fertility c)
3001	3	3101	+	+
3002	-	3102	-	///
3003	4	3103	+	+
3004	4	3104	+	+
3005	1	3105	+	+
3006	1	3106	+	+
3007	2	3107	+	+
3008	3	3108	+	+
3009	1	3109	+	+
3010	4	3110	+	+
3011	1	3111	+	+
3012	8	3112	+	+
n	11		12	11
Mean	2.9			
S.D.	2.1			
No. of positives			11	11
%			91.7 d)	100.0 e)

/// : No need to input/measure
EES: Ethyl ethyldimethyltetradecylammonium sulphate
a) - : Not copulation
b) + : Copulation, - : Not copulation
c) + : Pregnancy
d) : (Number of copulated animals / Number of mated animals)x 100
e) : (Number of males which impregnated females / Number of copulated males)x 100

Appendix 11 - 4 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Reproductive performance

Generation : F0 Sex : Male Dose : EES 50 mg/kg Species : Rat

Animal No.	Elapsed day of conceiving a)	1st mating Paired animal	Copulation b)	Fertility c)
4001	3	4101	+	+
4002	-	4102	-	///
4003	2	4103	+	+
4004	3	4104	+	+
4005	1	4105	+	+
4006	2	4106	+	+
4007	4	4107	+	+
4008	3	4108	+	+
4009	3	4109	+	+
4010	4	4110	+	+
4011	1	4111	+	+
4012	1	4112	+	+
n	11		12	11
Mean	2.5			
S.D.	1.1			
No. of positives			11	11
%			91.7 d)	100.0 e)

/// : No need to input/measure
EES: Ethyl ethyldimethyltetradecylammonium sulphate
a) - : Not copulation
b) + : Copulation, - : Not copulation
c) + : Pregnancy
d) : (Number of copulated animals / Number of mated animals)x 100
e) : (Number of males which impregnated females / Number of copulated males)x 100

Appendix 11 - 5 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Reproductive performance

Generation : F0 Sex : Female Dose : EES 0 mg/kg Species : Rat

Animal No.	Elapsed day of conceiving	1st mating Paired animal	Copulation a)	Fertility b)
1101	3	1001	+	+
1102	2	1002	+	+
1103	4	1003	+	+
1104	6	1004	+	+
1105	4	1005	+	+
1106	1	1006	+	+
1107	3	1007	+	+
1108	3	1008	+	+
1109	2	1009	+	+
1110	2	1010	+	+
1111	3	1011	+	+
1112	1	1012	+	-
n	12		12	12
Mean	2.8			
S.D.	1.4			
No. of positives			12	11
%			100.0 c)	91.7 d)

/// : No need to input/measure
EES: Ethyl ethyldimethyltetradecylammonium sulphate
a) + : Copulation
b) + : Pregnancy, - : Non-pregnancy
c) : (Number of copulated animals / Number of mated animals)x 100
d) : (Number of pregnant females / Number of copulated females)x 100

Appendix 11 - 6 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Reproductive performance

Generation : F0 Sex : Female Dose : EES 5 mg/kg Species : Rat

Animal No.	Elapsed day of conceiving	1st mating Paired animal	Copulation a)	Fertility b)
2101	2	2001	+	+
2102	4	2002	+	+
2103	2	2003	+	+
2104	1	2004	+	+
2105	2	2005	+	+
2106	3	2006	+	+
2107	2	2007	+	+
2108	3	2008	+	+
2109	4	2009	+	+
2110	1	2010	+	+
2111	1	2011	+	+
2112	1	2012	+	+
n	12		12	12
Mean	2.2			
S.D.	1.1			
No. of positives			12	12
%			100.0 c)	100.0 d)

/// : No need to input/measure
EES: Ethyl ethyldimethyltetradecylammonium sulphate
a) + : Copulation
b) + : Pregnancy
c) : (Number of copulated animals / Number of mated animals)x 100
d) : (Number of pregnant females / Number of copulated females)x 100

Appendix 11 - 7 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Reproductive performance

Generation : F0 Sex : Female Dose : EES 15 mg/kg Species : Rat

Animal No.	Elapsed day of conceiving a)	1st mating Paired animal	Copulation b)	Fertility c)
3101	3	3001	+	+
3102	-	3002	-	///
3103	4	3003	+	+
3104	4	3004	+	+
3105	1	3005	+	+
3106	1	3006	+	+
3107	2	3007	+	+
3108	3	3008	+	+
3109	1	3009	+	+
3110	4	3010	+	+
3111	1	3011	+	+
3112	8	3012	+	+
n	11		12	11
Mean	2.9			
S.D.	2.1			
No. of positives			11	11
%			91.7 d)	100.0 e)

/// : No need to input/measure
EES: Ethyl ethyldimethyltetradecylammonium sulphate
a) - : Not copulation
b) + : Copulation, - : Not copulation
c) + : Pregnancy
d) : (Number of copulated animals / Number of mated animals)x 100
e) : (Number of pregnant females / Number of copulated females)x 100

Appendix 11 - 8 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Reproductive performance

Generation : F0 Sex : Female Dose : EES 50 mg/kg Species : Rat

Animal No.	Elapsed day of conceiving a)	1st mating Paired animal	Copulation b)	Fertility c)
4101	3	4001	+	+
4102	-	4002	-	///
4103	2	4003	+	+
4104	3	4004	+	+
4105	1	4005	+	+
4106	2	4006	+	+
4107	4	4007	+	+
4108	3	4008	+	+
4109	3	4009	+	+
4110	4	4010	+	+
4111	1	4011	+	+
4112	1	4012	+	+
n	11		12	11
Mean	2.5			
S.D.	1.1			
No. of positives			11	11
%			91.7 d)	100.0 e)

/// : No need to input/measure
EES: Ethyl ethyldimethyltetradecylammonium sulphate
a) - : Not copulation
b) + : Copulation, - : Not copulation
c) + : Pregnancy
d) : (Number of copulated animals / Number of mated animals)x 100
e) : (Number of pregnant females / Number of copulated females)x 100

Appendix 12 - 1

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Study No. : R-1244

Delivery data

Generation : F0 Dose : EES 0 mg/kg Species : Rat

Dam No.	Gestation period (day)	Number of implan-tation	Postimplan-tation loss (%) a)	Delivery index (%) b)	Live birth index (%) c)	Number of offspring	Number of live newborns			Number of dead newborns			
							M	F	Total	M	F	U	Total
1101	22.5	18(6/12)	5.6	94.4	100.0	17	6	11	17	0	0	0	0
1102	21.5	15(10/5)	13.3	86.7	100.0	13	10	3	13	0	0	0	0
1103	22	15(5/10)	0.0	100.0	100.0	15	8	7	15	0	0	0	0
1104	22	16(8/8)	12.5	87.5	100.0	14	9	5	14	0	0	0	0
1105	22	18(9/9)	5.6	94.4	100.0	17	5	12	17	0	0	0	0
1106	22	15(7/8)	0.0	100.0	100.0	15	7	8	15	0	0	0	0
1107	22	20(12/8)	5.0	95.0	100.0	19	8	11	19	0	0	0	0
1108	22	15(9/6)	0.0	100.0	100.0	15	6	9	15	0	0	0	0
1109	21.5	17(11/6)	0.0	100.0	100.0	17	7	10	17	0	0	0	0
1110	22	18(11/7)	11.1	94.4	94.1	17	5	11	16	1	0	0	1
1111	22.5	9(5/4)	22.2	77.8	100.0	7	6	1	7	0	0	0	0
n	11	11	11	11	11	11	11	11	11	11	11	11	11
Mean	22.0	16.0	6.8	93.7	99.5	15.1	7.0	8.0	15.0	0.1	0.0	0.0	0.1
S.D.	0.3	2.9	7.2	7.1	1.8	3.2	1.6	3.6	3.1	0.3	0.0	0.0	0.3

(/) : Right/Left, M : Male, F : Female, U : Unable to be sexed

EES: Ethyl ethyldimethyltetradecylammonium sulphate

a): [(Number of implantation - Number of liveborns) / Number of implantation] x 100

b): (Number of delivered pups / Number of implantation) x 100

c): (Number of liveborns / Number of delivered pups) x 100

Appendix 12 - 2

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Study No. : R-1244

Delivery data

Generation : F0 Dose : EES 5 mg/kg Species : Rat

Dam No.	Gestation period (day)	Number of implan-tation	Postimplan-tation loss (%) a)	Delivery index (%) b)	Live birth index (%) c)	Number of offspring	Number of live newborns			Number of dead newborns			
							M	F	Total	M	F	U	Total
2101	22.5	18(12/6)	16.7	94.4	88.2	17	9	6	15	1	1	0	2
2102	22.5	17(5/12)	11.8	88.2	100.0	15	7	8	15	0	0	0	0
2103	22	17(9/8)	11.8	100.0	88.2	17	7	8	15	1	1	0	2
2104	22.5	12(7/5)	16.7	83.3	100.0	10	5	5	10	0	0	0	0
2105	22	20(9/11)	10.0	90.0	100.0	18	9	9	18	0	0	0	0
2106	23	20(13/7)	10.0	90.0	100.0	18	3	15	18	0	0	0	0
2107	22	17(6/11)	5.9	100.0	94.1	17	10	6	16	1	0	0	1
2108	22	16(12/4)	0.0	100.0	100.0	16	7	9	16	0	0	0	0
2109	21.5	17(6/11)	0.0	100.0	100.0	17	12	5	17	0	0	0	0
2110	22	16(9/7)	12.5	87.5	100.0	14	9	5	14	0	0	0	0
2111	22	19(9/10)	0.0	100.0	100.0	19	9	10	19	0	0	0	0
2112	22	15(9/6)	13.3	93.3	92.9	14	4	9	13	1	0	0	1
n	12	12	12	12	12	12	12	12	12	12	12	12	12
Mean	22.2	17.0	9.0	93.9	97.0	16.0	7.6	7.9	15.5	0.3	0.2	0.0	0.5
S.D.	0.4	2.2	6.2	6.1	4.8	2.4	2.6	2.9	2.5	0.5	0.4	0.0	0.8

(/) : Right/Left, M : Male, F : Female, U : Unable to be sexed

EES: Ethyl ethyldimethyltetradecylammonium sulphate

a): [(Number of implantation - Number of liveborns) / Number of implantation] x 100

b): (Number of delivered pups / Number of implantation) x 100

c): (Number of liveborns / Number of delivered pups) x 100

Appendix 12 - 3

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Study No. : R-1244

Delivery data

Generation : F0 Dose : EES 15 mg/kg Species : Rat

Dam No.	Gestation period (day)	Number of implan-tation	Postimplan-tation loss (%) a)	Delivery index (%) b)	Live birth index (%) c)	Number of offspring	Number of live newborns			Number of dead newborns			
							M	F	Total	M	F	U	Total
3101	22.5	19(7/12)	5.3	94.7	100.0	18	7	11	18	0	0	0	0
3103	22.5	15(5/10)	13.3	86.7	100.0	13	7	6	13	0	0	0	0
3104	21.5	17(8/9)	11.8	94.1	93.8	16	7	8	15	1	0	0	1
3106	22	15(7/8)	13.3	93.3	92.9	14	9	4	13	1	0	0	1
3107	21.5	17(6/11)	0.0	100.0	100.0	17	7	10	17	0	0	0	0
3108	22	16(10/6)	6.3	93.8	100.0	15	6	9	15	0	0	0	0
3109	22	15(7/8)	26.7	73.3	100.0	11	5	6	11	0	0	0	0
3110	21.5	17(8/9)	0.0	100.0	100.0	17	5	12	17	0	0	0	0
3111	22	17(13/4)	11.8	88.2	100.0	15	6	9	15	0	0	0	0
3112	22.5	14(10/4)	14.3	85.7	100.0	12	5	7	12	0	0	0	0
n	10	10	10	10	10	10	10	10	10	10	10	10	10
Mean	22.0	16.2	10.3	91.0	98.7	14.8	6.4	8.2	14.6	0.2	0.0	0.0	0.2
S.D.	0.4	1.5	7.9	7.9	2.8	2.3	1.3	2.5	2.3	0.4	0.0	0.0	0.4

(/) : Right/Left, M : Male, F : Female, U : Unable to be sexed

EES: Ethyl ethyldimethyltetradecylammonium sulphate

a): [(Number of implantation - Number of liveborns) / Number of implantation] x 100

b): (Number of delivered pups / Number of implantation) x 100

c): (Number of liveborns / Number of delivered pups) x 100

Appendix 12 - 4

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Study No. : R-1244

Delivery data

Generation : F0 Dose : EES 50 mg/kg Species : Rat

Dam No.	Gestation period (day)	Number of implan-tation	Postimplan-tation loss (%) a)	Delivery index (%) b)	Live birth index (%) c)	Number of offspring	Number of live newborns			Number of dead newborns			
							M	F	Total	M	F	U	Total
4101	22	16(6/10)	0.0	100.0	100.0	16	7	9	16	0	0	0	0
4103	22	17(8/9)	11.8	88.2	100.0	15	9	6	15	0	0	0	0
4104	22	18(9/9)	0.0	100.0	100.0	18	11	7	18	0	0	0	0
4105	23	15(7/8)	20.0	80.0	100.0	12	2	10	12	0	0	0	0
4106	22	17(7/10)	0.0	100.0	100.0	17	7	10	17	0	0	0	0
4107	21.5	16(8/8)	6.3	93.8	100.0	15	7	8	15	0	0	0	0
4108	21.5	16(10/6)	18.8	87.5	92.9	14	9	4	13	1	0	0	1
4109	22.5	15(8/7)	0.0	100.0	100.0	15	4	11	15	0	0	0	0
4110	22	17(9/8)	5.9	94.1	100.0	16	7	9	16	0	0	0	0
4111	23.5	13(6/7)	15.4	100.0	84.6	13	6	5	11	1	1	0	2
4112	22	16(9/7)	6.3	93.8	100.0	15	5	10	15	0	0	0	0
n	11	11	11	11	11	11	11	11	11	11	11	11	11
Mean	22.2	16.0	7.7	94.3	98.0	15.1	6.7	8.1	14.8	0.2	0.1	0.0	0.3
S.D.	0.6	1.3	7.7	6.7	4.9	1.7	2.5	2.3	2.1	0.4	0.3	0.0	0.6

(/) : Right/Left, M : Male, F : Female, U : Unable to be sexed

EES: Ethyl ethyldimethyltetradecylammonium sulphate

a): [(Number of implantation - Number of liveborns) / Number of implantation] x 100

b): (Number of delivered pups / Number of implantation) x 100

c): (Number of liveborns / Number of delivered pups) x 100

Appendix 13 - 1 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

External examination of offspring Unit : Number of anomalous offspring (incidence %) Days after birth : 0

Generation : F0 Dose : EES 0 mg/kg Species : Rat

Dam No.	Number of offspring examined	/Findings
1101	17	No anomaly
1102	13	No anomaly
1103	15	No anomaly
1104	14	No anomaly
1105	17	No anomaly
1106	15	No anomaly
1107	19	No anomaly
1108	15	No anomaly
1109	17	No anomaly
1110	17	No anomaly
1111	7	No anomaly
Total	166	
n	11	
Mean		
S.D.		

Mean : Average of incidence (%) : (Number of pups with external anomalies / Number of delivered pups) x 100

EES: Ethyl ethyldimethyltetradecylammonium sulphate

"No anomaly" was calculated as "0".

Appendix 13 - 2 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

External examination of offspring Unit : Number of anomalous offspring (incidence %) Days after birth : 0

Generation : F0 Dose : EES 5 mg/kg Species : Rat

Dam No.	Number of offspring examined	/Findings
2101	17	No anomaly
2102	15	No anomaly
2103	17	No anomaly
2104	10	No anomaly
2105	18	No anomaly
2106	18	No anomaly
2107	17	No anomaly
2108	16	No anomaly
2109	17	No anomaly
2110	14	No anomaly
2111	19	No anomaly
2112	14	No anomaly
Total	192	
n	12	
Mean		
S.D.		

Mean : Average of incidence (%) : (Number of pups with external anomalies / Number of delivered pups) x 100

EES: Ethyl ethyldimethyltetradecylammonium sulphate

"No anomaly" was calculated as "0".

Appendix 13 - 3 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

External examination of offspring Unit : Number of anomalous offspring (incidence %) Days after birth : 0

Generation : F0 Dose : EES 15 mg/kg Species : Rat

Dam No.	Number of offspring examined	/Findings
3101	18	No anomaly
3103	13	No anomaly
3104	16	No anomaly
3106	14	No anomaly
3107	17	No anomaly
3108	15	No anomaly
3109	11	No anomaly
3110	17	No anomaly
3111	15	No anomaly
3112	12	No anomaly
Total	148	
n	10	
Mean		
S.D.		

Mean : Average of incidence (%) : (Number of pups with external anomalies / Number of delivered pups) x 100

EES: Ethyl ethyldimethyltetradecylammonium sulphate

"No anomaly" was calculated as "0".

Appendix 13 - 4 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

External examination of offspring Unit : Number of anomalous offspring (incidence %) Days after birth : 0

Generation : F0 Dose : EES 50 mg/kg Species : Rat

Dam No.	Number of offspring examined	/Findings
4101	16	No anomaly
4103	15	No anomaly
4104	18	No anomaly
4105	12	No anomaly
4106	17	No anomaly
4107	15	No anomaly
4108	14	No anomaly
4109	15	No anomaly
4110	16	No anomaly
4111	13	No anomaly
4112	15	No anomaly
Total	166	
n	11	
Mean		
S.D.		

Mean : Average of incidence (%) : (Number of pups with external anomalies / Number of delivered pups) x 100

EES: Ethyl ethyldimethyltetradecylammonium sulphate

"No anomaly" was calculated as "0".

Appendix 14 - 1

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Study No. : R-1244

Anogenital of offspring

Generation : F0 Dose : EES 0 mg/kg Unit : mm Species : Rat

Dam No.	Sex	/Days after birth 0 n	AGD	Normalized a) AGD
1101	Male	6	2.4	1.3
	Female	11	1.1	0.6
1102	Male	10	2.4	1.3
	Female	3	0.9	0.5
1103	Male	8	2.6	1.4
	Female	7	1.1	0.6
1104	Male	9	2.6	1.4
	Female	5	1.1	0.6
1105	Male	5	2.5	1.3
	Female	12	1.0	0.6
1106	Male	7	2.4	1.3
	Female	8	0.9	0.5
1107	Male	8	2.5	1.4
	Female	11	0.9	0.5
1108	Male	6	2.5	1.3
	Female	9	0.9	0.5
1109	Male	7	2.5	1.3
	Female	10	0.9	0.5
1110	Male	5	2.8	1.5
	Female	11	1.2	0.7
1111	Male	6	2.2	1.2
	Female	1	0.9	0.5
n	Male	77		
	Female	88		
Mean	Male		2.5	1.3
	Female		1.0	0.6
S.D.	Male		0.2	0.1
	Female		0.1	0.1

AGD : Anogenital Distance

EES: Ethyl ethyldimethyltetradecylammonium sulphate

a): AGD (mm) / Cube root of body weight (g)

Appendix 14 - 2

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Study No. : R-1244

Anogenital of offspring

Generation : F0 Dose : EES 5 mg/kg Unit : mm Species : Rat

Dam No.	Sex	/Days after birth 0 n	AGD	Normalized a) AGD
2101	Male	9	2.9	1.5
	Female	6	0.9	0.5
2102	Male	7	2.8	1.5
	Female	8	1.1	0.6
2103	Male	7	2.4	1.3
	Female	8	1.0	0.5
2104	Male	5	2.3	1.2
	Female	5	0.9	0.5
2105	Male	9	2.4	1.3
	Female	9	0.9	0.5
2106	Male	3	2.8	1.5
	Female	15	0.9	0.5
2107	Male	10	2.3	1.3
	Female	6	1.0	0.6
2108	Male	7	2.6	1.4
	Female	9	0.9	0.5
2109	Male	12	2.2	1.2
	Female	5	1.1	0.6
2110	Male	9	2.5	1.3
	Female	5	0.9	0.5
2111	Male	9	2.5	1.3
	Female	10	0.9	0.5
2112	Male	4	2.6	1.4
	Female	9	1.0	0.5
n	Male	91		
	Female	95		
Mean	Male		2.5	1.4
	Female		1.0	0.5
S.D.	Male		0.2	0.1
	Female		0.1	0.0

AGD : Anogenital Distance

EES: Ethyl ethyldimethyltetradecylammonium sulphate

a): AGD (mm) / Cube root of body weight (g)

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Anogenital of offspring

Generation : F0 | Dose : EES 15 mg/kg | Unit : mm | Species : Rat

Dam No.	Sex	/Days after birth 0 n	AGD	Normalized a) AGD
3101	Male	7	2.5	1.3
	Female	11	0.9	0.5
3103	Male	7	2.5	1.3
	Female	6	1.0	0.6
3104	Male	7	2.4	1.3
	Female	8	0.9	0.5
3106	Male	9	2.4	1.3
	Female	4	0.9	0.5
3107	Male	7	2.5	1.4
	Female	10	0.9	0.5
3108	Male	6	2.5	1.3
	Female	9	0.9	0.5
3109	Male	5	2.5	1.3
	Female	6	0.9	0.5
3110	Male	5	2.2	1.2
	Female	12	0.9	0.5
3111	Male	6	2.6	1.4
	Female	9	0.9	0.5
3112	Male	5	2.6	1.4
	Female	7	0.8	0.4
n	Male	64		
	Female	82		
Mean	Male		2.5	1.3
	Female		0.9	0.5
S.D.	Male		0.1	0.1
	Female		0.0	0.0

AGD : Anogenital Distance
EES: Ethyl ethyldimethyltetradecylammonium sulphate
a): AGD (mm) / Cube root of body weight (g)

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Anogenital of offspring

Generation : F0 Dose : EES 50 mg/kg Unit : mm Species : Rat

Dam No.	Sex	/Days after birth 0 n	AGD	Normalized a) AGD
4101	Male	7	2.5	1.3
	Female	9	0.9	0.4
4103	Male	9	2.3	1.2
	Female	6	0.9	0.5
4104	Male	11	2.5	1.3
	Female	7	0.9	0.5
4105	Male	2	2.4	1.2
	Female	10	1.0	0.5
4106	Male	7	2.4	1.3
	Female	10	0.9	0.5
4107	Male	7	2.4	1.3
	Female	8	0.9	0.5
4108	Male	9	2.4	1.3
	Female	4	1.0	0.5
4109	Male	4	2.8	1.4
	Female	11	1.0	0.5
4110	Male	7	2.3	1.3
	Female	9	0.9	0.5
4111	Male	6	2.6	1.3
	Female	5	1.1	0.6
4112	Male	5	2.5	1.3
	Female	10	0.9	0.5
n	Male	74		
	Female	89		
Mean	Male		2.5	1.3
	Female		0.9	0.5
S.D.	Male		0.1	0.1
	Female		0.1	0.0

AGD : Anogenital Distance
EES: Ethyl ethyldimethyltetradecylammonium sulphate
a): AGD (mm) / Cube root of body weight (g)

Appendix 15 - 1 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Litter size and viability index of offspring

Generation : F0 Dose : EES 0 mg/kg Species : Rat

	/Days after birth	0	4	4	4	13	13
			Pre-culled	Viability	Culled		Viability
Dam No.	Sex	Male/Female	Male/Female	index (%) a)	Male/Female	Male/Female	index (%) b)
1101	Total	17	17	100.0	8	8	100.0
		(6/11)	(6/11)		(4/4)	(4/4)	
1102	Total	13	13	100.0	8	8	100.0
		(10/3)	(10/3)		(5/3)	(5/3)	
1103	Total	15	15	100.0	8	8	100.0
		(8/7)	(8/7)		(4/4)	(4/4)	
1104	Total	14	14	100.0	8	8	100.0
		(9/5)	(9/5)		(4/4)	(4/4)	
1105	Total	17	17	100.0	8	8	100.0
		(5/12)	(5/12)		(4/4)	(4/4)	
1106	Total	15	15	100.0	8	8	100.0
		(7/8)	(7/8)		(4/4)	(4/4)	
1107	Total	19	19	100.0	8	8	100.0
		(8/11)	(8/11)		(4/4)	(4/4)	
1108	Total	15	15	100.0	8	8	100.0
		(6/9)	(6/9)		(4/4)	(4/4)	
1109	Total	17	17	100.0	8	8	100.0
		(7/10)	(7/10)		(4/4)	(4/4)	
1110	Total	16	16	100.0	8	8	100.0
		(5/11)	(5/11)		(4/4)	(4/4)	
1111	Total	7	6	85.7	6	6	100.0
		(6/1)	(5/1)		(5/1)	(5/1)	
Total		165	164		86	86	
Male/Female		77/88	76/88		46/40	46/40	
n		11	11	11	11	11	11
Mean			14.9	98.7		7.8	100.0
S.D.			3.4	4.3		0.6	0.0

EES: Ethyl ethyldimethyltetradecylammonium sulphate

a): (Number of pups alive on day 4 after birth / Number of live born pups) × 100

b): (Number of pups alive on day 13 after birth / Number of pups after culling on day 4 after birth) × 100

Appendix 15 - 2 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Litter size and viability index of offspring

Generation : F0 Dose : EES 5 mg/kg Species : Rat

	/Days after birth	0	4	4	4	13	13
			Pre-culled	Viability	Culled		Viability
Dam No.	Sex	Male/Female	Male/Female	index (%) a)	Male/Female	Male/Female	index (%) b)
2101	Total	15	15	100.0	8	8	100.0
		(9/6)	(9/6)		(4/4)	(4/4)	
2102	Total	15	15	100.0	8	8	100.0
		(7/8)	(7/8)		(4/4)	(4/4)	
2103	Total	15	15	100.0	8	8	100.0
		(7/8)	(7/8)		(4/4)	(4/4)	
2104	Total	10	10	100.0	8	8	100.0
		(5/5)	(5/5)		(4/4)	(4/4)	
2105	Total	18	17	94.4	8	8	100.0
		(9/9)	(9/8)		(4/4)	(4/4)	
2106	Total	18	17	94.4	8	8	100.0
		(3/15)	(3/14)		(3/5)	(3/5)	
2107	Total	16	16	100.0	8	8	100.0
		(10/6)	(10/6)		(4/4)	(4/4)	
2108	Total	16	16	100.0	8	8	100.0
		(7/9)	(7/9)		(4/4)	(4/4)	
2109	Total	17	17	100.0	8	8	100.0
		(12/5)	(12/5)		(4/4)	(4/4)	
2110	Total	14	14	100.0	8	8	100.0
		(9/5)	(9/5)		(4/4)	(4/4)	
2111	Total	19	16	84.2	8	8	100.0
		(9/10)	(9/7)		(4/4)	(4/4)	
2112	Total	13	13	100.0	8	8	100.0
		(4/9)	(4/9)		(4/4)	(4/4)	
Total		186	181		96	96	
Male/Female		91/95	91/90		47/49	47/49	
n		12	12	12	12	12	12
Mean			15.1	97.8		8.0	100.0
S.D.			2.0	4.8		0.0	0.0

EES: Ethyl ethyldimethyltetradecylammonium sulphate

a): (Number of pups alive on day 4 after birth / Number of live born pups) × 100

b): (Number of pups alive on day 13 after birth / Number of pups after culling on day 4 after birth) × 100

Appendix 15 - 3 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Litter size and viability index of offspring

Generation : F0 Dose : EES 15 mg/kg Species : Rat

	/Days after birth	0	4	4	4	13	13
			Pre-culled	Viability	Culled		Viability
Dam No.	Sex	Male/Female	Male/Female	index (%) a)	Male/Female	Male/Female	index (%) b)
3101	Total	18	18	100.0	8	8	100.0
		(7/11)	(7/11)		(4/4)	(4/4)	
3103	Total	13	13	100.0	8	8	100.0
		(7/6)	(7/6)		(4/4)	(4/4)	
3104	Total	15	15	100.0	8	8	100.0
		(7/8)	(7/8)		(4/4)	(4/4)	
3106	Total	13	12	92.3	8	7	87.5
		(9/4)	(8/4)		(4/4)	(4/3)	
3107	Total	17	15	88.2	8	8	100.0
		(7/10)	(5/10)		(4/4)	(4/4)	
3108	Total	15	15	100.0	8	8	100.0
		(6/9)	(6/9)		(4/4)	(4/4)	
3109	Total	11	11	100.0	8	8	100.0
		(5/6)	(5/6)		(4/4)	(4/4)	
3110	Total	17	16	94.1	8	8	100.0
		(5/12)	(5/11)		(4/4)	(4/4)	
3111	Total	15	15	100.0	8	8	100.0
		(6/9)	(6/9)		(4/4)	(4/4)	
3112	Total	12	12	100.0	8	8	100.0
		(5/7)	(5/7)		(4/4)	(4/4)	
Total		146	142		80	79	
Male/Female		64/82	61/81		40/40	40/39	
n		10	10	10	10	10	10
Mean			14.2	97.5		7.9	98.8
S.D.			2.1	4.3		0.3	4.0

EES: Ethyl ethyldimethyltetradecylammonium sulphate

a): (Number of pups alive on day 4 after birth / Number of live born pups) × 100

b): (Number of pups alive on day 13 after birth / Number of pups after culling on day 4 after birth) × 100

Appendix 15 - 4 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Litter size and viability index of offspring

Generation : F0 Dose : EES 50 mg/kg Species : Rat

	/Days after birth	0	4	4	4	13	13
			Pre-culled	Viability	Culled		Viability
Dam No.	Sex	Male/Female	Male/Female	index (%) a)	Male/Female	Male/Female	index (%) b)
4101	Total	16	16	100.0	8	8	100.0
		(7/9)	(7/9)		(4/4)	(4/4)	
4103	Total	15	15	100.0	8	8	100.0
		(9/6)	(9/6)		(4/4)	(4/4)	
4104	Total	18	18	100.0	8	8	100.0
		(11/7)	(11/7)		(4/4)	(4/4)	
4105	Total	12	12	100.0	8	8	100.0
		(2/10)	(2/10)		(2/6)	(2/6)	
4106	Total	17	17	100.0	8	8	100.0
		(7/10)	(7/10)		(4/4)	(4/4)	
4107	Total	15	15	100.0	8	8	100.0
		(7/8)	(7/8)		(4/4)	(4/4)	
4108	Total	13	12	92.3	8	8	100.0
		(9/4)	(8/4)		(4/4)	(4/4)	
4109	Total	15	15	100.0	8	8	100.0
		(4/11)	(4/11)		(4/4)	(4/4)	
4110	Total	16	16	100.0	8	8	100.0
		(7/9)	(7/9)		(4/4)	(4/4)	
4111	Total	11	10	90.9	8	8	100.0
		(6/5)	(5/5)		(4/4)	(4/4)	
4112	Total	15	14	93.3	8	8	100.0
		(5/10)	(5/9)		(4/4)	(4/4)	
Total		163	160		88	88	
Male/Female		74/89	72/88		42/46	42/46	
n		11	11	11	11	11	11
Mean			14.5	97.9		8.0	100.0
S.D.			2.4	3.7		0.0	0.0

EES: Ethyl ethyldimethyltetradecylammonium sulphate

a): (Number of pups alive on day 4 after birth / Number of live born pups) × 100

b): (Number of pups alive on day 13 after birth / Number of pups after culling on day 4 after birth) × 100

Appendix 16 - 1 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Sex ratio

Generation : F0 Dose : EES 0 mg/kg Species : Rat

	day 4 after birth		
Dam No.	Number of males	Number of females	Sex ratio (%) a)
1101	6	11	
1102	10	3	
1103	8	7	
1104	9	5	
1105	5	12	
1106	7	8	
1107	8	11	
1108	6	9	
1109	7	10	
1110	5	11	
1111	5	1	
n	11	11	
Total	76	88	76/164
(%)			46.3

EES: Ethyl ethyldimethyltetradecylammonium sulphate

a): (Number of male pups alive on day 4 after birth / Number of pups alive on day 4 after birth) × 100

Appendix 16 - 2

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Study No. : R-1244

Sex ratio

Generation : F0 Dose : EES 5 mg/kg Species : Rat

	day 4 after birth		
Dam No.	Number of males	Number of females	Sex ratio (%) a)
2101	9	6	
2102	7	8	
2103	7	8	
2104	5	5	
2105	9	8	
2106	3	14	
2107	10	6	
2108	7	9	
2109	12	5	
2110	9	5	
2111	9	7	
2112	4	9	
n	12	12	
Total	91	90	91/181
(%)			50.3

EES: Ethyl ethyldimethyltetradecylammonium sulphate

a): (Number of male pups alive on day 4 after birth / Number of pups alive on day 4 after birth) × 100

Appendix 16 - 3

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Study No. : R-1244

Sex ratio

Generation : F0 Dose : EES 15 mg/kg Species : Rat

	day 4 after birth		
Dam No.	Number of males	Number of females	Sex ratio (%) a)
3101	7	11	
3103	7	6	
3104	7	8	
3106	8	4	
3107	5	10	
3108	6	9	
3109	5	6	
3110	5	11	
3111	6	9	
3112	5	7	
n	10	10	
Mean	61	81	61/142
S.D.			43.0

EES: Ethyl ethyldimethyltetradecylammonium sulphate

a): (Number of male pups alive on day 4 after birth / Number of pups alive on day 4 after birth) × 100

Appendix 16 - 4

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Study No. : R-1244

Sex ratio

Generation : F0 Dose : EES 50 mg/kg Species : Rat

	day 4 after birth		
Dam No.	Number of males	Number of females	Sex ratio (%) a)
4101	7	9	
4103	9	6	
4104	11	7	
4105	2	10	
4106	7	10	
4107	7	8	
4108	8	4	
4109	4	11	
4110	7	9	
4111	5	5	
4112	5	9	
n	11	11	
Mean	72	88	72/160
S.D.			45.0

EES: Ethyl ethyldimethyltetradecylammonium sulphate

a): (Number of male pups alive on day 4 after birth / Number of pups alive on day 4 after birth) × 100

Appendix 17 - 1 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Body weight of offspring

Generation : F0 Dose : EES 0 mg/kg Unit : g Species : Rat

		/Days after birth									
		0		4/Pre-culled		4/Culled		7		13	
Dam No.	Sex	n	B.W.	n	B.W.	n	B.W.	n	B.W.	n	B.W.
1101	Male	6	6.5	6	9.4	4	9.9	4	16.9	4	34.6
	Female	11	6.0	11	8.7	4	8.9	4	15.2	4	32.1
1102	Male	10	6.2	10	8.7	5	8.7	5	13.6	5	26.0
	Female	3	5.9	3	8.3	3	8.3	3	12.9	3	25.5
1103	Male	8	6.8	8	10.7	4	11.1	4	18.3	4	35.5
	Female	7	6.5	7	10.4	4	10.4	4	17.6	4	34.6
1104	Male	9	6.7	9	11.2	4	11.7	4	19.0	4	36.2
	Female	5	6.4	5	11.0	4	11.3	4	18.3	4	35.7
1105	Male	5	6.9	5	11.4	4	11.7	4	19.6	4	37.0
	Female	12	6.2	12	10.6	4	11.0	4	18.6	4	35.6
1106	Male	7	6.1	7	9.7	4	9.8	4	16.2	4	32.7
	Female	8	5.9	8	9.3	4	9.6	4	15.9	4	32.0
1107	Male	8	6.0	8	9.2	4	9.2	4	15.5	4	31.5
	Female	11	5.4	11	8.0	4	8.6	4	14.7	4	30.5
1108	Male	6	6.5	6	10.4	4	10.6	4	18.1	4	35.0
	Female	9	5.9	9	9.6	4	10.2	4	17.4	4	34.3
1109	Male	7	5.9	7	8.2	4	8.2	4	13.9	4	28.1
	Female	10	5.8	10	8.0	4	8.7	4	14.6	4	28.9
1110	Male	5	6.3	5	10.1	4	10.4	4	17.2	4	34.4
	Female	11	5.9	11	9.9	4	10.2	4	16.8	4	33.4
1111	Male	6	7.2	5	13.2	5	13.2	5	19.3	5	33.2
	Female	1	7.7	1	13.1	1	13.1	1	18.8	1	32.9
n	Male	77		76		46		46		46	
	Female	88		88		40		40		40	
Mean	Male		6.5		10.2		10.4		17.1		33.1
	Female		6.1		9.7		10.0		16.4		32.3
S.D.	Male		0.4		1.4		1.5		2.1		3.4
	Female		0.6		1.5		1.4		1.9		3.1

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 17 - 2 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Body weight of offspring

Generation : F0 Dose : EES 5 mg/kg Unit : g Species : Rat

		/Days after birth									
		0		4/Pre-culled		4/Culled		7		13	
Dam No.	Sex	n	B.W.	n	B.W.	n	B.W.	n	B.W.	n	B.W.
2101	Male	9	6.6	9	10.8	4	10.4	4	17.5	4	35.3
	Female	6	6.1	6	10.2	4	10.6	4	18.0	4	35.3
2102	Male	7	6.9	7	10.9	4	10.9	4	18.0	4	35.8
	Female	8	6.6	8	10.6	4	10.7	4	17.7	4	34.9
2103	Male	7	6.6	7	10.7	4	10.8	4	17.9	4	34.6
	Female	8	6.2	8	10.1	4	10.3	4	16.7	4	33.3
2104	Male	5	7.3	5	12.5	4	13.6	4	21.7	4	36.4
	Female	5	7.5	5	13.4	4	13.6	4	21.4	4	37.2
2105	Male	9	6.0	9	9.1	4	9.1	4	15.6	4	33.9
	Female	9	5.7	8	9.0	4	9.1	4	15.5	4	33.3
2106	Male	3	6.3	3	10.8	3	10.8	3	18.0	3	33.8
	Female	15	6.3	14	10.8	5	12.0	5	19.7	5	35.5
2107	Male	10	6.6	10	11.3	4	11.2	4	18.1	4	35.0
	Female	6	6.1	6	10.1	4	10.7	4	17.4	4	33.7
2108	Male	7	6.5	7	10.3	4	10.7	4	18.0	4	35.0
	Female	9	6.2	9	10.1	4	10.5	4	17.7	4	34.1
2109	Male	12	5.9	12	9.0	4	9.6	4	15.2	4	31.0
	Female	5	5.6	5	8.2	4	8.5	4	13.7	4	28.8
2110	Male	9	6.8	9	10.7	4	11.4	4	18.4	4	34.4
	Female	5	6.7	5	10.6	4	10.6	4	16.9	4	32.1
2111	Male	9	6.3	9	9.2	4	9.7	4	16.1	4	33.8
	Female	10	5.9	7	8.5	4	8.9	4	14.4	4	29.7
2112	Male	4	7.2	4	12.2	4	12.2	4	19.1	4	34.9
	Female	9	6.4	9	11.3	4	11.8	4	18.9	4	34.1
n	Male	91		91		47		47		47	
	Female	95		90		49		49		49	
Mean	Male		6.6		10.6		10.9		17.8		34.5
	Female		6.3		10.2		10.6		17.3		33.5
S.D.	Male		0.4		1.1		1.2		1.7		1.4
	Female		0.5		1.4		1.4		2.2		2.4

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 17 - 3 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Body weight of offspring

Generation : F0 Dose : EES 15 mg/kg Unit : g Species : Rat

		/Days after birth									
		0		4/Pre-culled		4/Culled		7		13	
Dam No.	Sex	n	B.W.	n	B.W.	n	B.W.	n	B.W.	n	B.W.
3101	Male	7	7.1	7	10.3	4	10.9	4	17.7	4	36.4
	Female	11	6.9	11	10.3	4	10.6	4	16.8	4	34.9
3103	Male	7	6.9	7	10.2	4	10.4	4	15.9	4	31.1
	Female	6	6.7	6	10.0	4	10.0	4	15.8	4	30.6
3104	Male	7	6.0	7	8.7	4	8.6	4	14.1	4	28.5
	Female	8	5.7	8	8.3	4	8.4	4	14.2	4	28.1
3106	Male	9	6.6	8	10.4	4	11.2	4	18.4	4	33.0
	Female	4	6.1	4	9.2	4	9.2	3	16.9	3	31.3
3107	Male	7	5.7	5	9.2	4	9.4	4	16.3	4	32.0
	Female	10	5.5	10	8.6	4	9.2	4	15.5	4	30.6
3108	Male	6	7.1	6	10.9	4	11.0	4	17.9	4	33.3
	Female	9	6.5	9	10.2	4	10.8	4	17.7	4	32.5
3109	Male	5	7.3	5	12.7	4	12.9	4	20.6	4	36.0
	Female	6	6.8	6	11.7	4	12.3	4	20.0	4	35.9
3110	Male	5	6.3	5	8.9	4	9.1	4	15.4	4	31.9
	Female	12	5.5	11	8.1	4	8.6	4	14.7	4	29.8
3111	Male	6	6.8	6	10.8	4	10.9	4	17.8	4	32.8
	Female	9	6.4	9	10.0	4	10.0	4	16.2	4	30.9
3112	Male	5	7.4	5	11.7	4	11.7	4	18.7	4	35.6
	Female	7	7.0	7	11.3	4	11.6	4	18.6	4	35.7
n	Male	64		61		40		40		40	
	Female	82		81		40		39		39	
Mean	Male		6.7		10.4		10.6		17.3		33.1
	Female		6.3		9.8		10.1		16.6		32.0
S.D.	Male		0.6		1.2		1.3		1.9		2.4
	Female		0.6		1.2		1.3		1.8		2.7

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 17 - 4 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Body weight of offspring

Generation : F0 Dose : EES 50 mg/kg Unit : g Species : Rat

		/Days after birth									
		0		4/Pre-culled		4/Culled		7		13	
Dam No.	Sex	n	B.W.	n	B.W.	n	B.W.	n	B.W.	n	B.W.
4101	Male	7	7.1	7	10.7	4	10.8	4	18.2	4	35.1
	Female	9	6.7	9	10.5	4	10.7	4	18.0	4	34.0
4103	Male	9	6.4	9	10.0	4	10.3	4	17.6	4	33.8
	Female	6	6.1	6	9.5	4	9.4	4	16.1	4	31.8
4104	Male	11	6.5	11	9.7	4	10.3	4	17.1	4	32.9
	Female	7	6.0	7	9.0	4	9.3	4	15.9	4	30.8
4105	Male	2	8.4	2	12.8	2	12.8	2	19.5	2	34.1
	Female	10	7.7	10	12.1	6	12.2	6	18.6	6	31.9
4106	Male	7	6.4	7	10.1	4	10.6	4	18.0	4	33.2
	Female	10	6.1	10	9.5	4	10.4	4	17.2	4	32.6
4107	Male	7	6.1	7	8.8	4	9.0	4	15.3	4	28.6
	Female	8	5.5	8	7.9	4	8.5	4	14.1	4	26.8
4108	Male	9	6.5	8	9.7	4	10.4	4	16.5	4	31.5
	Female	4	5.8	4	8.3	4	8.3	4	13.0	4	26.0
4109	Male	4	7.5	4	11.6	4	11.6	4	18.1	4	33.0
	Female	11	7.4	11	10.9	4	11.5	4	17.8	4	32.2
4110	Male	7	5.8	7	7.3	4	7.6	4	12.8	4	26.3
	Female	9	5.8	9	7.5	4	7.6	4	13.1	4	26.4
4111	Male	6	7.6	5	11.5	4	11.5	4	16.8	4	30.8
	Female	5	7.3	5	11.1	4	11.4	4	16.0	4	29.9
4112	Male	5	6.9	5	11.1	4	11.3	4	19.4	4	34.8
	Female	10	6.4	9	9.9	4	10.6	4	18.2	4	34.0
n	Male	74		72		42		42		42	
	Female	89		88		46		46		46	
Mean	Male		6.8		10.3		10.6		17.2		32.2
	Female		6.4		9.7		10.0		16.2		30.6
S.D.	Male		0.8		1.5		1.4		1.9		2.7
	Female		0.7		1.4		1.5		2.0		2.9

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 17 - 5 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Body weight gain of offspring Base : Day 4 after birth

Generation : F0 Dose : EES 0 mg/kg Unit : g Species : Rat

		/Days after birth			
		/Before culling		/After culling	
Dam No.	Sex	n	0-4	n	4-13
1101	Male	6	2.9	4	24.7
	Female	11	2.7	4	23.2
1102	Male	10	2.5	5	17.3
	Female	3	2.4	3	17.2
1103	Male	8	3.9	4	24.4
	Female	7	3.9	4	24.2
1104	Male	9	4.5	4	24.5
	Female	5	4.6	4	24.4
1105	Male	5	4.5	4	25.3
	Female	12	4.4	4	24.6
1106	Male	7	3.6	4	22.9
	Female	8	3.4	4	22.4
1107	Male	8	3.2	4	22.3
	Female	11	2.6	4	22.0
1108	Male	6	3.9	4	24.4
	Female	9	3.7	4	24.1
1109	Male	7	2.3	4	19.9
	Female	10	2.2	4	20.2
1110	Male	5	3.8	4	24.1
	Female	11	4.0	4	23.2
1111	Male	5	6.0	5	19.9
	Female	1	5.4	1	19.8
n	Male	76		46	
	Female	88		40	
Mean	Male		3.7		22.7
	Female		3.6		22.3
S.D.	Male		1.0		2.6
	Female		1.0		2.3

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 17 - 6 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Body weight gain of offspring Base : Day 4 after birth

Generation : F0 Dose : EES 5 mg/kg Unit : g Species : Rat

		/Days after birth /Before culling		/After culling	
Dam No.	Sex	n	0-4	n	4-13
2101	Male	9	4.2	4	24.9
	Female	6	4.1	4	24.7
2102	Male	7	4.0	4	24.9
	Female	8	4.0	4	24.2
2103	Male	7	4.1	4	23.9
	Female	8	3.9	4	23.0
2104	Male	5	5.2	4	22.8
	Female	5	5.9	4	23.6
2105	Male	9	3.1	4	24.8
	Female	8	3.3	4	24.3
2106	Male	3	4.5	3	23.0
	Female	14	4.5	5	23.5
2107	Male	10	4.7	4	23.9
	Female	6	4.0	4	23.1
2108	Male	7	3.8	4	24.3
	Female	9	3.9	4	23.6
2109	Male	12	3.1	4	21.4
	Female	5	2.6	4	20.3
2110	Male	9	3.9	4	23.0
	Female	5	3.9	4	21.5
2111	Male	9	2.9	4	24.1
	Female	7	2.6	4	20.8
2112	Male	4	5.0	4	22.7
	Female	9	4.9	4	22.2
n	Male	91		47	
	Female	90		49	
Mean	Male		4.0		23.6
	Female		4.0		22.9
S.D.	Male		0.7		1.1
	Female		0.9		1.4

EES: Ethyl ethyldimethyltetradecylammonium sulphate

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Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Study No. : R-1244

Body weight gain of offspring

Base : Day 4 after birth

Generation : F0

Dose : EES 15 mg/kg

Unit : g

Species : Rat

		/Days after birth /Before culling		/After culling	
Dam No.	Sex	n	0-4	n	4-13
3101	Male	7	3.2	4	25.5
	Female	11	3.4	4	24.3
3103	Male	7	3.3	4	20.7
	Female	6	3.3	4	20.5
3104	Male	7	2.7	4	19.9
	Female	8	2.6	4	19.8
3106	Male	8	3.8	4	21.8
	Female	4	3.1	3	21.1
3107	Male	5	3.5	4	22.7
	Female	10	3.1	4	21.4
3108	Male	6	3.8	4	22.2
	Female	9	3.7	4	21.7
3109	Male	5	5.4	4	23.1
	Female	6	4.9	4	23.6
3110	Male	5	2.6	4	22.7
	Female	11	2.6	4	21.2
3111	Male	6	4.0	4	21.9
	Female	9	3.6	4	20.9
3112	Male	5	4.3	4	23.9
	Female	7	4.3	4	24.2
n	Male	61		40	
	Female	81		39	
Mean	Male		3.7		22.4
	Female		3.5		21.9
S.D.	Male		0.8		1.6
	Female		0.7		1.6

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 17 - 8 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Body weight gain of offspring Base : Day 4 after birth

Generation : F0 Dose : EES 50 mg/kg Unit : g Species : Rat

		/Days after birth /Before culling		/After culling	
Dam No.	Sex	n	0-4	n	4-13
4101	Male	7	3.6	4	24.3
	Female	9	3.8	4	23.3
4103	Male	9	3.6	4	23.6
	Female	6	3.4	4	22.4
4104	Male	11	3.2	4	22.6
	Female	7	3.0	4	21.5
4105	Male	2	4.4	2	21.3
	Female	10	4.4	6	19.6
4106	Male	7	3.7	4	22.6
	Female	10	3.4	4	22.2
4107	Male	7	2.7	4	19.6
	Female	8	2.4	4	18.2
4108	Male	8	3.2	4	21.2
	Female	4	2.5	4	17.8
4109	Male	4	4.1	4	21.4
	Female	11	3.5	4	20.7
4110	Male	7	1.5	4	18.7
	Female	9	1.7	4	18.8
4111	Male	5	3.9	4	19.4
	Female	5	3.8	4	18.5
4112	Male	5	4.2	4	23.4
	Female	9	3.5	4	23.5
n	Male	72		42	
	Female	88		46	
Mean	Male		3.5		21.6
	Female		3.2		20.6
S.D.	Male		0.8		1.8
	Female		0.8		2.1

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 18 - 1 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Externally for gross abnormalities in dead pups Study No. : R-1244

Dose : EES 0 mg/kg Species : Rat

Animal No.	Number of pups examined Total (Male + Female)		Findings
1101	0		
1102	0		
1103	0		
1104	0		
1105	0		
1106	0		
1107	0		
1108	0		
1109	0		
1110	0		
1111	1	(1+0)	NAF

NAF : No abnormal findings
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 18 - 2 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Externally for gross abnormalities in dead pups Study No. : R-1244

Dose : EES 5 mg/kg Species : Rat

Animal No.	Number of pups examined Total (Male + Female)		Findings
2101	0		
2102	0		
2103	0		
2104	0		
2105	1	(0+1)	NAF
2106	1	(0+1)	NAF
2107	0		
2108	0		
2109	0		
2110	0		
2111	1	(0+1)	NAF
2112	0		

NAF : No abnormal findings
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 18 - 3 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Externally for gross abnormalities in dead pups Study No. : R-1244

Dose : EES 15 mg/kg Species : Rat

Animal No.	Number of pups examined Total (Male + Female)		Findings
3101	0		
3103	0		
3104	0		
3106	1	(1+0)	NAF
3107	0		
3108	0		
3109	0		
3110	1	(0+1)	NAF
3111	0		
3112	0		

NAF : No abnormal findings
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 18 - 4 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Externally for gross abnormalities in dead pups Study No. : R-1244

Dose : EES 50 mg/kg Species : Rat

Animal No.	Number of pups examined Total (Male + Female)		Findings
4101	0		
4103	0		
4104	0		
4105	0		
4106	0		
4107	0		
4108	1	(1+0)	NAF
4109	0		
4110	0		
4111	0		
4112	1	(0+1)	NAF

NAF : No abnormal findings
EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 19 - 1 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Nipple retention of male pups

Generation : F0 Dose : EES 0 mg/kg Unit : No. Days after birth : 13 Species : Rat

Dam No.	Sex	Offspring No. : Nipple retention				Mean	S.D.	n
1101	Male	1101M01 : 0	1101M02 : 0	1101M03 : 0	1101M04 : 0	0.0	0.0	4
1102	Male	1102M01 : 0	1102M02 : 0	1102M03 : 0	1102M04 : 0			
		1102M05 : 0				0.0	0.0	5
1103	Male	1103M01 : 0	1103M02 : 0	1103M03 : 0	1103M04 : 0	0.0	0.0	4
1104	Male	1104M01 : 0	1104M02 : 0	1104M03 : 0	1104M04 : 0	0.0	0.0	4
1105	Male	1105M01 : 0	1105M02 : 0	1105M03 : 0	1105M04 : 0	0.0	0.0	4
1106	Male	1106M01 : 0	1106M02 : 0	1106M03 : 0	1106M04 : 0	0.0	0.0	4
1107	Male	1107M01 : 0	1107M02 : 0	1107M03 : 0	1107M04 : 0	0.0	0.0	4
1108	Male	1108M01 : 0	1108M02 : 0	1108M03 : 0	1108M04 : 0	0.0	0.0	4
1109	Male	1109M01 : 0	1109M02 : 0	1109M03 : 0	1109M04 : 0	0.0	0.0	4
1110	Male	1110M01 : 0	1110M02 : 0	1110M03 : 0	1110M04 : 0	0.0	0.0	4
1111	Male	1111M01 : 0	1111M02 : 0	1111M03 : 0	1111M04 : 0			
		1111M05 : 0				0.0	0.0	5

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Nipple retention: Number of nipple / areolae

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Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Study No. : R-1244

Nipple retention of male pups

Days after birth : 13

Generation : F0 Dose : EES 5 mg/kg Unit : No. Species : Rat

Dam No.	Sex	Offspring No. : Nipple retention				Mean	S.D.	n
2101	Male	2101M01 : 0	2101M02 : 0	2101M03 : 0	2101M04 : 0	0.0	0.0	4
2102	Male	2102M01 : 0	2102M02 : 0	2102M03 : 0	2102M04 : 0	0.0	0.0	4
2103	Male	2103M01 : 0	2103M02 : 0	2103M03 : 0	2103M04 : 0	0.0	0.0	4
2104	Male	2104M01 : 0	2104M02 : 0	2104M03 : 0	2104M04 : 0	0.0	0.0	4
2105	Male	2105M01 : 0	2105M02 : 0	2105M03 : 0	2105M04 : 0	0.0	0.0	4
2106	Male	2106M01 : 0	2106M02 : 0	2106M03 : 0		0.0	0.0	3
2107	Male	2107M01 : 0	2107M02 : 0	2107M03 : 0	2107M04 : 0	0.0	0.0	4
2108	Male	2108M01 : 0	2108M02 : 0	2108M03 : 0	2108M04 : 0	0.0	0.0	4
2109	Male	2109M01 : 0	2109M02 : 0	2109M03 : 0	2109M04 : 0	0.0	0.0	4
2110	Male	2110M01 : 0	2110M02 : 0	2110M03 : 0	2110M04 : 0	0.0	0.0	4
2111	Male	2111M01 : 0	2111M02 : 0	2111M03 : 0	2111M04 : 0	0.0	0.0	4
2112	Male	2112M01 : 0	2112M02 : 0	2112M03 : 0	2112M04 : 0	0.0	0.0	4

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Nipple retention: Number of nipple / areolae

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Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Study No. : R-1244

Nipple retention of male pups

Days after birth : 13

Generation : F0 Dose : EES 15 mg/kg Unit : No. Species : Rat

Dam No.	Sex	Offspring No. : Nipple retention				Mean	S.D.	n
3101	Male	3101M01 : 0	3101M02 : 0	3101M03 : 0	3101M04 : 0	0.0	0.0	4
3103	Male	3103M01 : 0	3103M02 : 0	3103M03 : 0	3103M04 : 0	0.0	0.0	4
3104	Male	3104M01 : 0	3104M02 : 0	3104M03 : 0	3104M04 : 0	0.0	0.0	4
3106	Male	3106M01 : 0	3106M02 : 0	3106M03 : 0	3106M04 : 0	0.0	0.0	4
3107	Male	3107M01 : 0	3107M02 : 0	3107M03 : 0	3107M04 : 0	0.0	0.0	4
3108	Male	3108M01 : 0	3108M02 : 0	3108M03 : 0	3108M04 : 0	0.0	0.0	4
3109	Male	3109M01 : 0	3109M02 : 0	3109M03 : 0	3109M04 : 0	0.0	0.0	4
3110	Male	3110M01 : 0	3110M02 : 0	3110M03 : 0	3110M04 : 0	0.0	0.0	4
3111	Male	3111M01 : 0	3111M02 : 0	3111M03 : 0	3111M04 : 0	0.0	0.0	4
3112	Male	3112M01 : 0	3112M02 : 0	3112M03 : 0	3112M04 : 0	0.0	0.0	4

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Nipple retention: Number of nipple / areolae

Appendix 19 - 4 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Nipple retention of male pups

Generation : F0 Dose : EES 50 mg/kg Unit : No. Days after birth : 13 Species : Rat

Dam No.	Sex	Offspring No. : Nipple retention				Mean	S.D.	n
4101	Male	4101M01 : 0	4101M02 : 0	4101M03 : 0	4101M04 : 0	0.0	0.0	4
4103	Male	4103M01 : 0	4103M02 : 0	4103M03 : 0	4103M04 : 0	0.0	0.0	4
4104	Male	4104M01 : 0	4104M02 : 0	4104M03 : 0	4104M04 : 0	0.0	0.0	4
4105	Male	4105M01 : 0	4105M02 : 0			0.0	0.0	2
4106	Male	4106M01 : 0	4106M02 : 0	4106M03 : 0	4106M04 : 0	0.0	0.0	4
4107	Male	4107M01 : 0	4107M02 : 0	4107M03 : 0	4107M04 : 0	0.0	0.0	4
4108	Male	4108M01 : 0	4108M02 : 0	4108M03 : 0	4108M04 : 0	0.0	0.0	4
4109	Male	4109M01 : 0	4109M02 : 0	4109M03 : 0	4109M04 : 0	0.0	0.0	4
4110	Male	4110M01 : 0	4110M02 : 0	4110M03 : 0	4110M04 : 0	0.0	0.0	4
4111	Male	4111M01 : 0	4111M02 : 0	4111M03 : 0	4111M04 : 0	0.0	0.0	4
4112	Male	4112M01 : 0	4112M02 : 0	4112M03 : 0	4112M04 : 0	0.0	0.0	4

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Nipple retention: Number of nipple / areolae

Appendix 20 - 1 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Gross pathological findings in pups on postnatal day 13

Dose : EES 0 mg/kg Species : Rat

Animal No.	Number of pups examined Total	(Male + Female)	Findings
1101	8	(4+4)	NAF
1102	8	(5+3)	NAF
1103	8	(4+4)	NAF
1104	8	(4+4)	NAF
1105	8	(4+4)	NAF
1106	8	(4+4)	NAF
1107	8	(4+4)	NAF
1108	8	(4+4)	NAF
1109	8	(4+4)	NAF
1110	8	(4+4)	NAF
1111	6	(5+1)	NAF

NAF : No abnormal findings

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 20 - 2 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Gross pathological findings in pups on postnatal day 13

Dose : EES 5 mg/kg Species : Rat

Animal No.	Number of pups examined Total	(Male + Female)	Findings
2101	8	(4+4)	NAF
2102	8	(4+4)	NAF
2103	8	(4+4)	NAF
2104	8	(4+4)	NAF
2105	8	(4+4)	NAF
2106	8	(3+5)	NAF
2107	8	(4+4)	NAF
2108	8	(4+4)	NAF
2109	8	(4+4)	NAF
2110	8	(4+4)	NAF
2111	8	(4+4)	NAF
2112	8	(4+4)	NAF

NAF : No abnormal findings

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 20 - 3

Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats

Gross pathological findings in pups on postnatal day 13

Study No. : R-1244

Dose : EES 15 mg/kg

Species : Rat

Animal No.	Number of pups examined Total	(Male + Female)	Findings
3101	8	(4+4)	NAF
3103	8	(4+4)	NAF
3104	8	(4+4)	NAF
3106	7	(4+3)	NAF
3107	8	(4+4)	NAF
3108	8	(4+4)	NAF
3109	8	(4+4)	NAF
3110	8	(4+4)	NAF
3111	8	(4+4)	NAF
3112	8	(4+4)	NAF

NAF : No abnormal findings

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 20 - 4 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Gross pathological findings in pups on postnatal day 13

Dose : EES 50 mg/kg Species : Rat

Animal No.	Number of pups examined Total	(Male + Female)	Findings
4101	8	(4+4)	NAF
4103	8	(4+4)	NAF
4104	8	(4+4)	NAF
4105	8	(2+6)	NAF
4106	8	(4+4)	NAF
4107	8	(4+4)	NAF
4108	8	(4+4)	NAF
4109	8	(4+4)	NAF
4110	8	(4+4)	NAF
4111	8	(4+4)	NAF
4112	8	(4+4)	NAF

NAF : No abnormal findings

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 21 - 1 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Organ weight Stage : After culled (F1 males)

Sex : Male Dose : EES 0 mg/kg Species : Rat

Animal No.	Body weight g	Thyroid-RL AB mg	Thyroid-RL RE mg/100g
1101M01	36.0	5.7	15.8
1102M01	27.2	2.7	9.9
1103M01	34.4	12.2	35.5
1104M01	36.9	3.2	8.7
1105M01	37.2	8.3	22.3
1106M01	34.7	4.7	13.5
1107M01	34.8	6.6	19.0
1108M01	32.6	3.0	9.2
1109M01	28.9	2.3	8.0
1110M01	33.9	2.4	7.1
1111M01	33.2	5.3	16.0
n	11	11	11
Mean	33.6	5.1	15.0
S.D.	3.1	3.0	8.4

AB : Absolute weight, RE : Relative weight by body weight

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 21 - 2 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Organ weight Stage : After culled (F1 males)

Sex : Male Dose : EES 5 mg/kg Species : Rat

Animal No.	Body weight g	Thyroid-RL AB mg	Thyroid-RL RE mg/100g
2101M01	35.3	3.7	10.5
2102M01	37.1	1.0	2.7
2103M01	36.1	5.4	15.0
2104M01	35.6	3.3	9.3
2105M01	34.5	4.8	13.9
2106M01	33.5	6.3	18.8
2107M01	36.3	4.6	12.7
2108M01	34.8	3.3	9.5
2109M01	33.0	3.5	10.6
2110M01	35.1	2.2	6.3
2111M01	30.2	2.8	9.3
2112M01	36.0	6.4	17.8
n	12	12	12
Mean	34.8	3.9	11.4
S.D.	1.9	1.6	4.6

AB : Absolute weight, RE : Relative weight by body weight

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 21 - 3 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Organ weight Stage : After culled (F1 males)

Sex : Male Dose : EES 15 mg/kg Species : Rat

Animal No.	Body weight g	Thyroid-RL AB mg	Thyroid-RL RE mg/100g
3101M01	36.0	2.8	7.8
3103M01	31.1	3.2	10.3
3104M01	29.6	4.3	14.5
3106M01	35.2	4.6	13.1
3107M01	34.1	7.4	21.7
3108M01	33.3	5.4	16.2
3109M01	37.7	5.3	14.1
3110M01	32.6	3.3	10.1
3111M01	34.9	3.3	9.5
3112M01	37.0	6.9	18.6
n	10	10	10
Mean	34.2	4.7	13.6
S.D.	2.6	1.6	4.4

AB : Absolute weight, RE : Relative weight by body weight

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 21 - 4 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Organ weight Stage : After culled (F1 males)

Sex : Male Dose : EES 50 mg/kg Species : Rat

Animal No.	Body weight g	Thyroid-RL AB mg	Thyroid-RL RE mg/100g
4101M01	38.2	5.7	14.9
4103M01	34.0	4.7	13.8
4104M01	33.4	4.9	14.7
4105M01	34.8	2.6	7.5
4106M01	35.8	3.6	10.1
4107M01	28.0	6.4	22.9
4108M01	34.6	5.3	15.3
4109M01	32.3	5.4	16.7
4110M01	26.5	3.6	13.6
4111M01	31.8	3.2	10.1
4112M01	35.4	6.2	17.5
n	11	11	11
Mean	33.2	4.7	14.3
S.D.	3.4	1.3	4.2

AB : Absolute weight, RE : Relative weight by body weight

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 21 - 5 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Organ weight Stage : After culled (F1 females)

Sex : Female Dose : EES 0 mg/kg Species : Rat

Animal No.	Body weight g	Thyroid-RL AB mg	Thyroid-RL RE mg/100g
1101F01	33.7	6.2	18.4
1102F01	27.7	3.4	12.3
1103F01	37.2	5.1	13.7
1104F01	35.2	3.1	8.8
1105F01	35.9	7.2	20.1
1106F01	33.4	1.6	4.8
1107F01	31.9	5.8	18.2
1108F01	35.0	3.8	10.9
1109F01	26.1	2.2	8.4
1110F01	32.9	4.0	12.2
1111F01	32.9	4.3	13.1
n	11	11	11
Mean	32.9	4.2	12.8
S.D.	3.4	1.7	4.7

AB : Absolute weight, RE : Relative weight by body weight

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 21 - 6 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Organ weight Stage : After culled (F1 females)

Sex : Female Dose : EES 5 mg/kg Species : Rat

Animal No.	Body weight g	Thyroid-RL AB mg	Thyroid-RL RE mg/100g
2101F01	36.8	2.8	7.6
2102F01	35.5	4.7	13.2
2103F01	32.1	2.5	7.8
2104F01	37.5	2.4	6.4
2105F01	34.0	3.6	10.6
2106F01	36.7	4.4	12.0
2107F01	33.3	3.7	11.1
2108F01	36.0	3.2	8.9
2109F01	29.7	4.7	15.8
2110F01	29.8	2.9	9.7
2111F01	29.3	5.8	19.8
2112F01	35.6	4.9	13.8
n	12	12	12
Mean	33.9	3.8	11.4
S.D.	3.0	1.1	3.8

AB : Absolute weight, RE : Relative weight by body weight

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 21 - 7 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Organ weight Stage : After culled (F1 females)

Sex : Female Dose : EES 15 mg/kg Species : Rat

Animal No.	Body weight g	Thyroid-RL AB mg	Thyroid-RL RE mg/100g
3101F01	34.3	6.1	17.8
3103F01	30.4	2.6	8.6
3104F01	27.2	2.6	9.6
3106F01	32.9	3.1	9.4
3107F01	32.9	6.5	19.8
3108F01	33.7	7.2	21.4
3109F01	35.5	4.2	11.8
3110F01	29.1	5.7	19.6
3111F01	32.3	3.7	11.5
3112F01	36.8	4.9	13.3
n	10	10	10
Mean	32.5	4.7	14.3
S.D.	2.9	1.7	4.9

AB : Absolute weight, RE : Relative weight by body weight

EES: Ethyl ethyldimethyltetradecylammonium sulphate

Appendix 21 - 8 Ethyl ethyldimethyltetradecylammonium sulphate: An oral combined repeated dose toxicity study with the reproduction/developmental toxicity screening test in rats Study No. : R-1244

Organ weight Stage : After culled (F1 females)

Sex : Female Dose : EES 50 mg/kg Species : Rat

Animal No.	Body weight g	Thyroid-RL AB mg	Thyroid-RL RE mg/100g
4101F01	36.2	3.9	10.8
4103F01	32.0	3.4	10.6
4104F01	30.2	1.5	5.0
4105F01	33.5	3.9	11.6
4106F01	31.5	2.6	8.3
4107F01	27.5	6.2	22.5
4108F01	32.2	3.3	10.2
4109F01	32.2	6.6	20.5
4110F01	27.2	2.1	7.7
4111F01	32.7	3.0	9.2
4112F01	35.6	4.4	12.4
n	11	11	11
Mean	31.9	3.7	11.7
S.D.	2.8	1.6	5.3

AB : Absolute weight, RE : Relative weight by body weight

EES: Ethyl ethyldimethyltetradecylammonium sulphate

信頼性保証書（1/4）

試験番号　：　R-1244

試験表題　：　Ethyl ethyldimethyltetradecylammonium sulphate：ラットを用いた経口投与による反復投与毒性･生殖発生毒性併合試験

本試験は以下に示す基準に従って実施されたことを保証致します。
なお、一部委託部分（血清中ホルモン濃度測定）については試験場所信頼性保証部門により保証されていることを確認致しております。

- 「新規化学物質等に係る試験を実施する試験施設に関する基準」
（平成 23 年 3 月 31 日：薬食発 0331 第 8 号、平成 23･03･29 製局第 6 号、環保企発第 110331010 号）

なお、調査は下記の通り実施し、報告致しました。

試験の調査

項　目	担当者	調　査　日	試験責任者及び運営管理者への報告日
試験計画書	[redacted]	2019 年　9 月　5 日	2019 年　9 月　5 日
作業予定表・コンピュータプロトコール		2019 年　9 月 24 日	2019 年　9 月 25 日
試験計画書変更書（1）		2019 年　9 月 25 日	2019 年　9 月 26 日
コンピュータプロトコール（変更後：PC 変-1）		2019 年　9 月 25 日	2019 年　9 月 26 日
被験物質の安定性確認（投与期間開始前）		2019 年　9 月 26 日	2019 年　9 月 26 日
調製・保存（被験物質）		2019 年　9 月 26 日	2019 年　9 月 26 日
被験液の分析		2019 年　9 月 26 日	2019 年　9 月 26 日
群分け		2019 年　9 月 30 日	2019 年　9 月 30 日

信頼性保証書（2/4）

項　目	担当者	調　査　日	試験責任者及び運営管理者への報告日
投与・一般状態の観察	[redacted]	2019年10月 1日	2019年10月 2日
膣垢検査		2019年10月 2日	2019年10月 2日
詳細な一般状態の観察		2019年10月 2日	2019年10月 2日
試験計画書変更書（2）		2019年10月10日	2019年10月10日
交配		2019年10月16日	2019年10月16日
機能検査、握力測定、自発運動量測定		2019年11月 6日	2019年11月 6日
分娩・哺育観察		2019年11月 7日	2019年11月 7日
尿検査（尿量・色調・定性・沈渣）		2019年11月 7日	2019年11月 7日
摂水量測定		2019年11月 8日	2019年11月 8日
尿検査（浸透圧）		2019年11月 8日	2019年11月 8日
哺育児数調整		2019年11月11日	2019年11月12日
採血（生後4日出生児）		2019年11月11日	2019年11月12日
採血・剖検（雄）		2019年11月12日	2019年11月12日
試料の発送（血清中ホルモン濃度測定用）		2019年11月13日	2019年11月13日
病理組織学検査（切り出し）		2019年11月18日	2019年11月18日
乳頭及び乳輪数の観察		2019年11月20日	2019年11月20日
剖検（生後13日出生児）		2019年11月20日	2019年11月20日
剖検（母動物）		2019年11月21日	2019年11月21日
被験物質の安定性確認（投与期間終了後）		2019年12月 6日	2019年12月 6日
試験計画書変更書（3）		2019年12月20日	2019年12月21日
図・表・付表（詳細な一般状態、機能検査、握力、自発運動量）		2020年 2月17日 2020年 2月18日 2020年 2月19日 2020年 2月20日	2020年 2月20日
改善確認		2020年 2月25日	2020年 2月25日

信頼性保証書（3/4）

項　目	担当者	調　査　日	試験責任者及び運営管理者への報告日
図・表・付表（一般状態、体重・摂餌量、尿検査、血液学検査・血液化学検査、器官重量、性周期、交配成績、分娩成績、出生児の外表観察・AGD・生存性・性比・体重・器官重量、死亡児の肉眼観察、雄新生児の乳頭/乳輪数）	[redacted]	2020年 2月17日 2020年 2月18日 2020年 2月19日 2020年 2月20日 2020年 2月21日 2020年 2月25日 2020年 2月26日	2020年 2月27日
改善確認		2020年 2月28日	2020年 2月28日
生データ		2020年 2月17日 2020年 2月18日 2020年 2月19日 2020年 2月20日 2020年 2月21日 2020年 2月25日 2020年 2月28日 2020年 3月 2日 2020年 3月13日 2020年 3月18日	2020年 3月18日
改善確認		2020年 3月23日	2020年 3月23日
試験計画書変更書（4）		2020年 2月28日	2020年 2月28日
表・付表（剖検・病理、出生児の生後13日剖検所見）		2020年 2月28日 2020年 3月 2日	2020年 3月 2日
改善確認		2020年 3月 5日	2020年 3月 6日
最終報告書草案		2020年 3月13日 2020年 3月14日	2020年 3月14日
改善確認		2020年 3月16日	2020年 3月16日
最終報告書		2020年 3月23日	2020年 3月23日

信頼性保証書（4/4）

プロセス調査

項　目	試験番号	担当者	調　査　日	試験責任者及び運営管理者への報告日
動物入荷	M-1580	[redacted]	2019年　8月 21日	2019年　8月 21日
検疫・馴化	M-1580		2019年　8月 21日	2019年　8月 21日
	M-1580		2019年　8月 28日	2019年　8月 28日
体重・摂餌量測定	R-1235		2019年　8月 23日	2019年　8月 23日
	R-1244		2019年 11月 11日	2019年 11月 12日
尿検査（電解質）	B-8565		2019年 10月 11日	2019年 10月 11日
血液学検査・血液化学検査	B-8519		2019年 10月 23日	2019年 10月 24日
病理組織学検査（包埋・薄切・染色）	R-1234		2019年 10月　8日	2019年 10月　8日
	R-1234		2019年 10月　9日	2019年 10月　9日
	R-1234		2019年 10月 11日	2019年 10月 11日

2020 年 3 月 23 日

株式会社ボゾリサーチセンタ[redacted]

主信頼性保証部門