Name: COMPLETE / SUBSTANCE : 4-chlorobenzoyl chloride / 122-01-0 Fri, 16 Dec 2022, 15:00:52+0900 /

Legal entity owner: National Institute of Health Sciences

Printing date: 2022-12-16T15:00:52.907+09:00

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DOSSIER:

UUID: 0
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Author:
Date: 2022-12-16T15:00:52.749+09:00
Remarks:

Dossier header

Dossier submission type

Name
Complete table of contents

Version
core 7.0

Name (given by user)

Dossier subject

Dossier subject
4-chlorobenzoyl chloride / 122-01-0

Public name

Submitting legal entity
National Institute of Health Science

Dossier creation date/time
Fri, 16 Dec 2022, 15:00:52+0900

Used in category

LEGAL_ENTITY: National Institute of Health Science

UUID:	f51e7b54-9211-4863-90ce-fcf8a155d647
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Author:	
Date:	2022-11-07T16:24:02.822+09:00
Remarks:	

General information

Legal entity name
National Institute of Health Science

4-chlorobenzoyl chloride

CORE

General information

Assessment approach (assessment entities)

FIXED_RECORD: Assessment approach

UUID:	2500619c-efbd-36d0-877d-7836c7505bb7
Dossier UUID:	
Author:	
Date:	2017-01-04T16:25:23.000+09:00
Remarks:	

OECD

Health Effects

Acute toxicity: oral

ENDPOINT_STUDY_RECORD: Acute toxicity: oral.001

UUID: IUC5-a979f21c-55c9-4b3c-9783-184bbe71d749
Dossier UUID:
Author:
Date: 2017-01-04T16:17:31.000+09:00
Remarks:

Administrative data

Endpoint
acute toxicity: oral

Type of information
experimental study

Adequacy of study
key study

Robust study summary
false

Used for classification
false

Used for SDS
false

Reliability
1 (reliable without restriction)

Rationale for reliability incl. deficiencies
other: OECD Test Guideline study under GLP condition

Data source

Reference

Single Dose Oral Toxicity Test of 4-chlorobenzoyl chloride in Rats / MHW (Ministry of Health and Welfare), Japan / study report

Data access
data published

Materials and methods

Test guideline

Qualifier
according to guideline

Guideline
OECD Guideline 423 (Acute Oral toxicity - Acute Toxic Class Method)

Deviations
no

GLP compliance
yes

Test type
acute toxic class method

Limit test
yes

Test material

Test material information
4-chlorobenzoyl chloride

Test animals

Species
rat
common species

Strain
Crj: CD(SD)
rat

Sex
female

Details on test animals or test system and environmental conditions
TEST ANIMALS- Source: Charles River Japan Inc.
- Age at the time of purchase: 7 weeks old
- Weight at dosing: Females, 190 - 198 g
- Fasting period before study: Approximately 16 hrs
- Housing: One animal/cage- Diet (e.g. ad libitum): Ad libitum except fasting period for 16 hrs before administration to 3 hrs after administration
- Water (e.g. ad libitum): Ad libitum
- Acclimation period: 7 - 8 days.
ENVIRONMENTAL CONDITIONS
- Temperature (°C): 22.6 - 23.6
- Humidity (%): 45.6 - 62.2
- Ventilation (per hr): Approximately > 12 times
- Photoperiod (hrs light / hrs dark): 12/12

Administration / exposure

Route of administration
oral: gavage

Vehicle
corn oil

Details on oral exposure
VEHICLE

- Concentration in vehicle: 40 w/v%
- Lot no.: V4F1900 produced by Nacalai Tesque, INC..
MAXIMUM DOSE VOLUME APPLIED: 5 ml/kg bw

Doses
2000 mg/kg bw

No. of animals per sex per dose
First time of administration: 3 females (animal ID No. 3, 7, 10) /dose
Second time of administration: 3 females (animal ID No. 6, 8, 9)/dose

Control animals
no

Details on study design
- Duration of observation period following administration: 14 days
- Frequency of observations: Day 1 (day of administration): within 30 minutes and 1, 2, 3, 4, 5 and 6 hrs after administration. After day 2: once a day
- Frequency of weighing: Days 1 (before administration), 7, and 14
- Necropsy of survivors performed: Yes
The LD50 value was estimated to be around 820 mg / kg from information of the test substance. Therefore, the starting administration dose was set as 2000 mg/kg bw. No clinical changes were observed in the first administration, therefore the second dose was also set as 2000 mg/kg bw

Statistics
No

Results and discussion

Effect levels

Key result
false

Sex
female

Dose descriptor
LD50

Effect level

>	2000	mg/kg bw

Based on
act. ingr.

Mortality
No deaths were observed in first and second times.

Clinical signs
other: No changes related to the test substance were observed in first and second times.

Gross pathology
No changes related to the test substance were observed in first and second times.

Other findings
- Organ weights: No data

- Histopathology: No data
- Potential target organs: Not identified
- Other observations: No data

Applicant's summary and conclusion

Conclusions
The LD50 value was more than 2000 mg/kg bw for female rats.

Repeated dose toxicity: oral

ENDPOINT_STUDY_RECORD: Repeated dose toxicity: oral.001

UUID:	IUC5-2c9bcc31-9c27-489b-aab9-4ae7f1fdf45c
Dossier UUID:	
Author:	
Date:	2022-12-16T14:58:25.475+09:00
Remarks:	

Administrative data

Endpoint
short-term repeated dose toxicity: oral combined repeated dose and reproduction / developmental screening

Type of information
experimental study

Adequacy of study
key study

Robust study summary
false

Used for classification
false

Used for SDS
false

Reliability
1 (reliable without restriction)

Rationale for reliability incl. deficiencies
other: OECD Test Guideline study under GLP condition

Cross-reference

Reason / purpose for cross-reference
reference to same study

Remarks
7.8.1 Toxicity to reproduction: Toxicity to reproduction.001

Data source

Reference

A combined repeated-dose/reproductive-developmental toxicity study of 4-chlorobenzoyl chloride by or / MHW (Ministry of Health and Welfare), Japan / study report

Data access
data published

Materials and methods

Test guideline

Qualifier
according to guideline

Guideline
OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test)

Deviations
no

GLP compliance
yes

Limit test
no

Test material

Test material information
4-chlorobenzoyl chloride

Test animals

Species
rat
common rodent species

Strain
Crj: CD(SD)
rat

Sex
male/female

Details on test animals or test system and environmental conditions
TEST ANIMALS
- Source: Atsugi Breeding Center, Charles River Laboratories Japan, Inc.
- Age at study initiation:10 weeks of age
- Weight at study initiation: 395-476 g for males and 225-282 g for females
- Housing: bracket-type metallic wire-mesh cages (W 250 × D 350 × H 170 mm)- Diet (e.g. ad libit um):ad libitum
- Water (e.g. ad libitum):ad libitum
- Acclimation period:19 days
ENVIRONMENTAL CONDITIONS
- Temperature (°C):21 to 24°C
- Humidity (%):40 to 56%
- Air changes (per hr):10 to 15 times per hour
- Photoperiod (hrs dark / hrs light):12-hour lighting per day

Administration / exposure

Route of administration
oral: gavage

Vehicle
corn oil

Details on oral exposure
PREPARATION OF DOSING SOLUTIONS: Test substance was dissolved in corn oil for injection.
VEHICLE
- Justification for use and choice of vehicle: No data
- Amount of vehicle (if gavage): 5 ml/kg bw
- Lot/batch no. (if required): V0M3906 produced by Nacalai Tesque, INC.
- Dosing volume: 5 mL/kg bw
- Stability (test solutions): At least 7 days
- Storage condition of test solution: Stored in a refrigerator

Analytical verification of doses or concentrations
yes

Details on analytical verification of doses or concentrations
Test suspensions at each concentration to be used for males in week 1 and six week of admi nistration were analyzed by the HPLC method at Bozo Research Center Inc. Results showed that the concentration of the test article in each suspension was 98.0 to 104.0% of the nominal concen tration and both values were within the acceptable range (concentration: percentage of the nominal c oncentration, 100 ± 10%; C.V.: 10% or below)

Duration of treatment / exposure
(P) Males: 42 days including 14 days pre-mating, mating, and thereafter 14 days (P)Females: 42–48 days including 14 days pre-mating, mating and gestation periods and the days until day 4 of lactation

Frequency of treatment
Daily: 7 times / week

Doses / concentrations

Remarks
Doses / Concentrations:
0 (vehicle), 20, 100 and 500 mg/kg bw/day
Basis:
actual ingested

No. of animals per sex per dose
12 animals/sex/dose (main dose group)
Five out of 12 males at 0 and 500 mg/kg bw/day were used as a recovery assessment group. In addition, 10 females/dose were administered 0 and 500 mg/kg bw/day for 42 days without mating and examined after the administration period or after a 14 day recovery period.

Control animals
yes, concurrent vehicle

Details on study design
- Dose selection rationale: A preliminary study was conducted to determine the doses to be employed. Male and female rats were receiving 0, 250, 500, and 1000 mg/kg bw/day of the substance was administered for 14 days. As a result, no death, and no effects of food consumption and hematolog y were observed in all treated groups. Loose stool, salivation, pale stool (females), slight depression of body weights, increase in T-CHO, decrease in BUN (males) and increase in liver weight (female s) were observed in both sexes receiving 1000 mg/kg. In addition, raised lesion in the forestomach in both sexes and dark red colored lesion in the glandular in males were observed in the 1000 mg/ kg bw/day group. Raised focus in the forestomach in both sexes and dark red colored lesion in the glandular in males were observed in the 500 mg/kg bw/day group. Raised focus in the forestomach

in females was observed in the 250 mg/kg bw/day group. Therefore, the highest dose was set at 500 mg/kg bw/day, the concentration in which the expression of apparent toxicity is expected, and the middle and low dose were set at 100 and 20 mg/kg bw/day using a common ratio of 5.

Positive control
no

Examinations

Observations and examinations performed and frequency
CAGE SIDE OBSERVATIONS: Yes
- Time schedule:
Males and females: once before the start of administration, 3 times/day during the administration period, and once during the recovery period
DETAILED CLINICAL OBSERVATIONS: Yes
- Time schedule:
Males: once before the start of administration, during the administration and recovery periods
Females: once before the start of administration, days 1, 7, 14 and 20 of gestation, and day 4 of lactation
BODY WEIGHT: Yes
- Time schedule for examinations:
Males in the main groups were weighed on days 1, 4, 8, 11, 15, 18, 22, 25, 29, 32, 36, 39 and 42 of administration and on the day of necropsy, and males and females in the recovery groups were weighed on days 1, 4, 8, 11 and 14 of recovery and on the day of necropsy in addition to the measurement days for males in the main groups.
Females in the main groups were weighed on days 1, 4, 8, 11 and 15 of administration (uncopulated animals were weighed on day 18 and 22 of administration as well), days 0, 4, 7, 11, 14, 17 and 20 of gestation, days 0 and 4 of lactation and the day of necropsy.
FOOD CONSUMPTION : Yes
- Food consumption (g/day/rat) for each animal determined from the difference of the of the previous day's feeding amount: Yes
Measurement of food consumption was conducted on all animals at the following frequencies: males in the main groups on days 1, 4, 8, 11, 15, 32, 36, 39 and 42 of administration; males and females in the recovery groups on days 1, 4, 8, 11 and 14 of recovery in addition to the measurement days for males in the main groups; and females in the main groups on days 1, 4, 8, 11 and 15 of administration, days 1, 4, 7, 11, 14, 17 and 20 of gestation and days 2 and 4 of lactation.
FOOD INTAKE: No
HAEMATOLOGY: Yes
- Time schedule for collection of blood: On the day after the final day of administration and on the final day of the recovery period
- Anaesthetic used for blood collection: Yes (identity)
- Animals fasted: Yes
- How many animals:5 animals/sex/group
- Parameters examined red blood cell count, hemoglobin, hematocrit, mean corpuscular volume, mean corpuscular hemoglobin, mean corpuscular hemoglobin concentration, reticulocyte percentage, platelet count, white blood cell count, differential white blood cell count, absolute number of each white blood cell, prothrombin time, activated partial thromboplastin time, fibrinogen
CLINICAL CHEMISTRY: Yes
- Time schedule for collection of blood: On the day after the final day of administration and on the final day of the recovery period
- Animals fasted: Yes
- How many animals: 5 animals/sex/group
- Parameters checked: ALP, total cholesterol, triglyceride, phospholipids, total bilirubin, glucose, blood urea nitrogen, creatinine, sodium, potassium, chloride, calcium, inorganic phosphorus, total protein, albumin, A/G ratio, AST (GOT), ALT (GPT), LDH, γ-GTP
URINALYSIS: Yes
- Time schedule for collection of urine: final week of administration (days 39 to 40 of administration) and in the final week of recovery (days 11 to 12 of recovery)

- Metabolism cages used for collection of urine: Yes
- Animals fasted: Yes ,
A urine collector to collect four-hour urine samples under fasting but ad libitum drinking conditions, fo llowed by collection of 20-hour urine samples under ad libitum feeding and drinking conditions.
- Parameters checked: pH, protein, ketones. glucose, occult blood, bilirubin, urobilinogen, color, sedim ent, urine volume (4-hour volume), osmotic pressure, urine volume (20-hour volume), water intake (24-hour volume)
BLOOD HORMONE: Yes
- Time schedule for collection of serum: Same as clinical chemistry
- Parameters checked: Triiodothyronine (T3), Thyroxin (T4), and thyroid stimulating hormone (THS) of thyroid hormone
NEUROBEHAVIOURAL EXAMINATION: Yes
- Time schedule for examinations: Manipulative test and measurements of grip strength and motor a ctivity were conducted on 5 animals per group with the following frequencies: males in the main grou ps were examined in the final week of administration (day 37 of administration), females in the main groups on day 4 of lactation (day 42 to day 44 of administration) after necropsy of F1 pups, and ma les and females in the recovery groups in the final week of administration (day 37 of administration) and in the final week of recovery (day 9 of recovery).
- Dose groups that were examined: All animals were examined for detailed clinical signs once before the start of administration. Thereafter, males in the main groups were examined once weekly during the administration period, whereas females were observed once weekly during the pre-mating adm inistration period and mating period as well as on designated days during the gestation and lactatio n periods (days 1, 7, 14 and 20 of gestation, and day 4 of lactation). Animals in the recovery groups were examined once weekly during the administration and recovery periods.
- Battery of functions tested:
1) Open field observation. Arousal, gait, posture, tremor, convulsion, rearing count, defecation (def ecation count, urination), stereotypy (grooming, circling, etc.), abnormal behavior (self-biting, ba ckward walking, etc.)
2) Manipulative Test. Auditory response, approach response, touch response, tail pinch response, p upillary reflex, aerial righting reflex, landing foot splay
3) Measurement of Grip Strength. Following manipulative test, grip strength of forelimb and hind limb was measured by CPU gauge MODEL-9502A (AIKOH Engineering Co., Ltd.).
4) Measurement of Motor Activity.Following measurement of grip strength, motor activity was measured by a motor activity sensor for experimental animals NS-AS01 (NeuroScience, Inc). The mea surement was conducted for 1 hour, and measured values at 10-minute intervals and from 0 to 60 minutes were collected.

Sacrifice and pathology
GROSS PATHOLOGY AND ORGAN WEIGHTS: Brain, puitality, thyroids(including parathyroids), thymus, heart, liver, spleen, kidneys, adrenals, seminal, prostate, testes, epididymis, ovaries, uterus
HISTOPATHOLOGY: Cerebrum, cerebellum (including pontocerebellar), sciatic nerve, spinal cord (thoracic), eye, optic nerve, Harder gland, pituitary, thyroid, parathyroid, adrenal glands, thymus, splee n, submandibular lymph nodes, mesenteric lymph nodes, heart, thoracic aorta, trachea, lung (includin g bronchial), tongue, larynx, esophagus, stomach, duodenum, jejunum, ileum (including Peyer's patche s), cecum, colon, rectum, submandibular gland, sublingual gland, liver, pancreas, kidney, bladder, t estis, ovary, epididymis, uterus, vagina, prostate, seminal vesicles (including the coagulating gland), mammary gland (groin), sternum and femur (including bone marrows), femoral skeletal muscle, skin (groin), macroscopic lesions, and parts for identification (auricles)

Statistics
The data were analyzed for homogeneity of variance by the Bartlett test (level of significance: 0.01, two-tailed). If variances were homogeneous, data was analyzed by the Dunnett test, whereas heterog eneous data was analyzed by a Steel test. In the recovery test, these values of two groups were anal yzed by F test and Student or Aspin-Welch t-test. Frequency data were analysed by Fisher test. Stati stical significance was set at < 5% by two-sided

Results and discussion

Results of examinations

Clinical signs
effects observed, treatment-related

Description (incidence and severity)
Salivation was observed in 1 to 7 males receiving 500 mg/kg bw/day after Day 12 during the dosing period. Salivation was observed in 1 mating female receiving 500 mg/kg bw/day after Day 12, however this sign was not observed after Day 16 of gestation. No clinical signs were observed in both sexes of recovery animals during the recovery period.

Mortality
no mortality observed

Body weight and weight changes
no effects observed

Food consumption and compound intake (if feeding study)
no effects observed

Food efficiency
not examined

Ophthalmological findings
no effects observed

Haematological findings
no effects observed

Clinical biochemistry findings
no effects observed

Urinalysis findings
no effects observed

Description (incidence and severity)
Significant increases in water consumption and urine volume were observed in males receiving 500 mg/kg bw/day, but it was not considered to be toxicological effects. during the dosing period.

Behaviour (functional findings)
no effects observed

Organ weight findings including organ / body weight ratios
effects observed, treatment-related

Description (incidence and severity)
see Details on results

Gross pathological findings
effects observed, treatment-related

Description (incidence and severity)
see Details on results

Histopathological findings: non-neoplastic
effects observed, treatment-related

Description (incidence and severity)
see Details on results

Histopathological findings: neoplastic
not examined

Details on results
DETAILED CLINICAL OBSERVATIONS, MANIPULATIVE TEST, GRIP STRENGTH TEST AND LOCOMOTOR ACTIVITY MEASUREMENT:There were no changes in main males and females and satellite females during the dosing and recovery periods.
ORGAN WEIGHTS: An Increase in relative kidney weight was observed in males receiving 500 mg/kg bw/day at the end of the administration period. Decreases in absolute and relative thymus weights were observed in mating females receiving 500 mg/kg bw/day at the end of the administration. In addition, a decrease in relative thyroid weight and increases in relative wights of the heart and testis were observed in males and decreases in relative weights of the puitality and heart were observed in females at 500 mg/kg bw/day at end of the recovery period; however, these changes were determined to be within physiological variation range.

GROSS PATHOLOGY:
Kidneys: Irregular surface was observed in 1 male receiving 500 mg/kg bw/day.
Stomach: Thickening wall and focus/raised of forestomach was observed in both sexes receiving 500 mg/kg bw/day.

HISTOPATHOLOGY
basophilic changes in the tubular cells of kidneys from males and both mating and non-mating females, and tubular dilatation, granular casts, and fibrosis was observed in male kidneys. Atrophy of the thymus was observed in all mating females, including the control group; however, the incidence was particularly high in the 500 mg/kg bw/day group. Furthermore, histopathological changes were observed in the stomach, including intercellular edema in squamous cells and cell infiltration or hyperplasia of the forestomach mucosa, in males and mating and non-mating females. Forestomach erosion and ulceration were present in one mating female administered 500 mg/kg bw/day. These histopathological changes tended to resolve after the 14 day recovery period.

Effect levels

Key result
false

Dose descriptor
NOAEL

Effect level

100 mg/kg bw/day (actual dose received)

Based on
act. ingr.

Sex
male/female

Basis for effect level
other: Effects of lesions in the kidneys and stomach of both sexes and the thymus of females at 500 mg/kg bw/day

Target system / organ toxicity

Key result
false

Critical effects observed
not specified

Any other information on results incl. tables

Figures and Tables (in English) are available in the following full report of the study.

http://dra4.nihs.go.jp/mhlw_data/home/pdf/PDF122-01-0d.pdf

Applicant's summary and conclusion

Conclusions
Based on the effects of 4-chlorobenzoyl chloride on the thymus, kidney, and stomach, the no observed adverse effect level (NOAEL) for repeated oral dosing was determined to be 100 mg/kg bw/day in male and female rats.

Executive summary

A combined repeated oral dose toxicity study with the reproduction/developmental toxicity screening test was performed according to the OECD TG 422. Male and female rats (12 animals/sex/dose) were administered 4-chlorobenzoyl chloride at 0, 20, 100, and 500 mg/kg bw/day. Males were dosed for 42 days, including a 14 day pre-mating period and subsequent mating period; whereas females were dosed for 42–48 days, including the 14 day pre-mating, mating, and gestation periods, and the time until day 4 of lactation. Five out of 12 males at 0 and 500 mg/kg bw/day were used as a recovery assessment group. In addition, 10 females/dose were administered 0 and 500 mg/kg bw/day for 42 days without mating and examined after the administration period or after a 14 day recovery period. At 500 mg/kg bw/day, the absolute and relative thymus weights had decreased in the mating group females. Relative kidney weight increased in males at 500 mg/kg bw/day. Histopathological examination revealed basophilic changes in the tubular cells of kidneys from males and both mating and non-mating females, and tubular dilatation, granular casts, and fibrosis was observed in male kidneys. Atrophy of the thymus was observed in all mating females, including the control group; however, the incidence was particularly high in the 500 mg/kg bw/day group. Furthermore, histopathological changes were observed in the stomach, including intercellular edema in squamous cells and cell infiltration or hyperplasia of the forestomach mucosa, in males and mating and non-mating females. Forestomach erosion and ulceration were present in one mating female administered 500 mg/kg bw/day. These histopathological changes tended to resolve after the 14 day recovery period. Based on the effects of 4-chlorobenzoyl chloride on the thymus, kidney, and stomach, the no observed adverse effect level (NOAEL) for repeated oral dosing was determined to be 100 mg/kg bw/day in male and female rats.

Genetic toxicity in vitro

ENDPOINT_STUDY_RECORD: Genetic toxicity in vitro.001

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Author:	
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Remarks:	

Administrative data

Endpoint
in vitro gene mutation study in bacteria Type of genotoxicity: gene mutation

Type of information
experimental study

Adequacy of study
key study

Robust study summary
false

Used for classification
false

Used for SDS
false

Reliability
1 (reliable without restriction)

Rationale for reliability incl. deficiencies
other: OECD Test Guideline study under GLP condition

Data source

Reference

Reverse Mutation Test of 4-chlorobenzoyl chloride on Bacteria. / MHW (Ministry of Health and Welfare), Japan / study report

Data access
data published

Materials and methods

Test guideline

Qualifier
according to guideline

Guideline
OECD Guideline 471 (Bacterial Reverse Mutation Assay)

in vitro gene mutation study in bacteria

Deviations
no

Qualifier
according to guideline

Guideline
OECD Guideline 472 (Genetic Toxicology: Escherichia coli, Reverse Mutation Assay)
in vitro gene mutation study in bacteria (before 21 July 1997)

Deviations
no

Qualifier
according to guideline

Guideline
JAPAN: Guidelines for Screening Mutagenicity Testing Of Chemicals

Deviations
no

GLP compliance
yes

Type of assay
bacterial reverse mutation assay
in vitro gene mutation study in bacteria

Test material

Test material information
4-chlorobenzoyl chloride

Method

Species / strain

Species / strain / cell type
S. typhimurium TA 1535, TA 1537, TA 98 and TA 100
bacteria

Species / strain / cell type
E. coli WP2 uvr A
bacteria

Metabolic activation
with and without

Metabolic activation system
rat liver, induced by phenobarbital and 5,6-benzoflavone

Test concentrations with justification for top dose
-S9 mix: 7.81, 15.6, 31.3, 62.5, 125, 250, 500 µg/plate (TA100, TA1535, TA98 strains)

, 15.6, 31.3, 62.5, 125, 250, 500, 1000 µg/plate (WP2uvrA strain), and 3.91, 7.81, 15.6, 31.3, 62.5, 125, 250 µg/plate (TA1537 strain)
+S9 mix: 15.6, 31.3, 62.5, 125, 250, 500, 1000 µg/plate (all strains)

Vehicle / solvent
- Vehicle(s)/solvent(s) used: Acetone

Controls

Untreated negative controls
no

Negative solvent / vehicle controls
yes

True negative controls
no

Positive controls
yes

Positive control substance
other: other: -S9 mix: 2-(2-Furyl)-3-(5-nitro-2-furyl) acrylamide (TA 100, TA98 and WP2 uvrA), sodium azide (TA1535) and 9-aminoacridine hydrochloride (TA1537). +S9 mix: 2-aminoanthracene (all strains)

Details on test system and experimental conditions
RANGE-FINDING/SCREENING STUDIES:Concentration: 9.19, 20.5, 51.2, 128, 320, 800, 2000, 5000 µg/plate
Cytotoxic conc.: No

METHOD OF APPLICATION: Preincubation
DURATION
- Preincubation period: 20 min at 37 °C
- Exposure duration:48 hrs
NUMBER OF PLATES: 3
NUMBER OF REPLICATIONS: 1
DETERMINATION OF CYTOTOXICITY
- Method: other: growth inhibition

Evaluation criteria
In any strain(s) tested with or without S9 mix, when the mean number of revertant colonies per plate increased twice more than that of the negative control and when the increase was shown to be dose-related and reproducible, the chemical was judged mutagenic.

Statistics
No

Results and discussion

Test results

Key result
false

Species / strain
S. typhimurium TA 1535, TA 1537, TA 98 and TA 100

bacteria

Metabolic activation
with and without

Genotoxicity
negative

Cytotoxicity / choice of top concentrations
no cytotoxicity

Vehicle controls validity
valid

Untreated negative controls validity
not examined

Positive controls validity
valid

Key result
false

Species / strain
E. coli WP2 uvr A
bacteria

Metabolic activation
with and without

Genotoxicity
negative

Cytotoxicity / choice of top concentrations
no cytotoxicity

Vehicle controls validity
valid

Untreated negative controls validity
not examined

Positive controls validity
valid

Remarks on result
other: all strains/cell types tested Migrated from field 'Test system'.

Any other information on results incl. tables

Figures and Tables (in English) are available in the following full report of the study.

http://dra4.nihs.go.jp/mhlw_data/home/pdf/PDF122-01-0e.pdf

Applicant's summary and conclusion

Conclusions
Interpretation of results (migrated information):

negative

In a bacterial reverse mutation assay using Salmonella typhimurium TA100, TA1535, TA98, and TA1537, and Escherichia coli WP2uvrA (OECD TG 471), 4-chlorobenzoyl chloride was negative with or without metabolic activation.

ENDPOINT_STUDY_RECORD: Genetic toxicity in vitro.002

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Remarks:	

Administrative data

Endpoint
in vitro cytogenicity / chromosome aberration study in mammalian cells Type of genotoxicity: chromosome aberration

Type of information
experimental study

Adequacy of study
key study

Robust study summary
false

Used for classification
false

Used for SDS
false

Reliability
1 (reliable without restriction)

Rationale for reliability incl. deficiencies
other: OECD Test Guideline study under GLP condition

Data source

Reference

In Vitro Chromosomal Aberration Test of 4-chlorobenzoyl chloride on Cultured Chinese Hamster Cells. / MHW (Ministry of Health and Welfare), Japan / study report

Data access
data published

Materials and methods

Test guideline

Qualifier
according to guideline

Guideline
OECD Guideline 473 (In Vitro Mammalian Chromosome Aberration Test)
in vitro cytogenicity / chromosome aberration study in mammalian cells

Deviations
no

Qualifier
according to guideline

Guideline
JAPAN: Guidelines for Screening Mutagenicity Testing Of Chemicals

Deviations
no

GLP compliance
yes

Type of assay
in vitro mammalian chromosome aberration test
chromosome aberration

Test material

Test material information
4-chlorobenzoyl chloride

Method

Target gene
Chromosome

Species / strain

Species / strain / cell type
other: Chinese hamster lung(CHL/IU) cells

Metabolic activation
with and without

Metabolic activation system
rat liver, induced by phenobarbital and 5,6-benzoflavone

Test concentrations with justification for top dose
-S9 mix (continuous treatment): 0, 74.1, 106, 151, 216, 309, 441 ug/mL-S9 mix (short-term treatment): 0, 106, 151, 216, 309, 441, 630 ug/mL+S9 mix (short-term treatment): 0, 106, 151, 216, 309, 441, 630, 900 ug/mL

Vehicle / solvent
- Vehicle(s)/solvent(s) used: Acetone

Controls

Untreated negative controls
no

Negative solvent / vehicle controls
yes

True negative controls
no

Positive controls
yes

Positive control substance
cyclophosphamide
mitomycin C

Details on test system and experimental conditions
METHOD OF APPLICATION: Exposure duration: [continuous treatment]: 24 hrs [short-term treat ment]:6 hrs + 18 hr
SPINDLE INHIBITOR: Colcemid
STAIN: Giemsa stain for 12 min.
NUMBER OF REPLICATIONS: 2
NUMBER OF CELLS EVALUATED: 200 cells / dose
DETERMINATION OF CYTOTOXICITY
- Method: relative total growth

Evaluation criteria
For the evaluation of the frequencies of structural aberrations and of polyploidy induced, the following criteria, which are usually used for chromosomal aberration testing with CHL, were employed.App earance incidence of cell with chromosomal aberrations:Negative(-): less than 5%Equivocal(±): 5% or more, less than 10%Positive(+): 10% or more

Statistics
Fisher and Chochran-Armitage trend tests (one-sided test, P = 2.5%)

Results and discussion

Test results

Key result
false

Species / strain
other: Chinese hamster lung (CHL/IU) cells

Metabolic activation
with and without

Genotoxicity
negative

Cytotoxicity / choice of top concentrations
no cytotoxicity

Vehicle controls validity
valid

Untreated negative controls validity
not examined

Positive controls validity
valid

Remarks on result
other: all strains/cell types tested Migrated from field 'Test system'.

Any other information on results incl. tables

Figures and Tables (in English) are available in the following full report of the study.

http://dra4.nihs.go.jp/mhlw_data/home/pdf/PDF122-01-0f.pdf

Applicant's summary and conclusion

Conclusions
Interpretation of results (migrated information):
negative

4-Chlorobenzoyl chloride did not induce chromosomal aberrations in cultured cells.

Executive summary

An in vitro chromosomal aberration test using CHL/IU cells (OECD TG 473) was negative with or without metabolic activation.

Toxicity to reproduction

ENDPOINT_STUDY_RECORD: Toxicity to reproduction.001

UUID:	IUC5-425c2820-7a3b-4906-ba61-2f2048c78a20
Dossier UUID:	
Author:	
Date:	2022-12-16T15:00:22.648+09:00
Remarks:	

Administrative data

Endpoint
screening for reproductive / developmental toxicity based on test type (migrated information)

Type of information
experimental study

Adequacy of study
key study

Robust study summary
false

Used for classification
false

Used for SDS
false

Reliability
1 (reliable without restriction)

Rationale for reliability incl. deficiencies
other: OECD Test Guideline study under GLP condition

Cross-reference

Reason / purpose for cross-reference
reference to same study

Remarks
7.5.Repeated dose toxicity: oral: Repeated dose toxicity: oral.001

Data source

Reference

A combined repeated-dose/reproductive-developmental toxicity study of 4-chlorobenzoyl chloride by or / MHW (Ministry of Health and Welfare), Japan / study report

Data access
data published

Materials and methods

Test guideline

Qualifier
according to guideline

Guideline
OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test)

Deviations
no

GLP compliance
yes

Limit test
no

Test material

Test material information
4-chlorobenzoyl chloride

Test animals

Species
rat

Strain
Crj: CD(SD)
rat

Sex
male/female

Details on test animals or test system and environmental conditions
TEST ANIMALS
- Source: Atsugi Breeding Center, Charles River Laboratories Japan, Inc.
- Age at study initiation:10 weeks of age
- Weight at study initiation: 395-476 g for males and 225-282 g for females
- Housing: bracket-type metallic wire-mesh cages (W 250 × D 350 × H 170 mm)- Diet (e.g. ad libit um):ad libitum
- Water (e.g. ad libitum):ad libitum
- Acclimation period:19 days
ENVIRONMENTAL CONDITIONS
- Temperature (°C):21 to 24°C
- Humidity (%):40 to 56%
- Air changes (per hr):10 to 15 times per hour
- Photoperiod (hrs dark / hrs light):12-hour lighting per day

Administration / exposure

Route of administration
oral: gavage

Vehicle
corn oil

Details on exposure
PREPARATION OF DOSING SOLUTIONS: Test substance was dissolved in corn oil for injection.
VEHICLE
- Justification for use and choice of vehicle: No data
- Amount of vehicle (if gavage): 5 ml/kg bw
- Lot/batch no. (if required): V0M3906 produced by Nacalai Tesque, INC.
- Dosing volume: 5 mL/kg bw
- Stability (test solutions): At least 7 days
- Storage condition of test solution: Stored in a refrigerator

Details on mating procedure
- M/F ratio per cage:1:1
- Length of cohabitation:up to 14 days
- Proof of pregnancy: [vaginal plug / sperm in vaginal smear] referred to as [day 0] of pregnancy
- After ... days of unsuccessful pairing replacement of first male by another male with proven fertility.
- Further matings after two unsuccessful attempts: [no]

Analytical verification of doses or concentrations
yes

Details on analytical verification of doses or concentrations
Test suspensions at each concentration to be used for males in week 1 and six week of admi nistration were analyzed by the HPLC method at Bozo Research Center Inc. Results showed that the concentration of the test article in each suspension was 98.0 to 104.0% of the nominal concen tration and both values were within the acceptable range (concentration: percentage of the nominal c oncentration, 100 ± 10%; C.V.: 10% or below)

Duration of treatment / exposure
(P) Males: 42 days including 14 days pre-mating, mating, and thereafter 14 days
(P)Females: 42-48 days including 14 days pre-mating, mating and gestation periods and the days unti l day 4 of lactation

Frequency of treatment
Daily: 7 times / week

Doses / concentrations

Remarks
Doses / Concentrations:
0 (vehicle), 20, 100 and 500 mg/kg bw/day
Basis:
actual ingested

No. of animals per sex per dose
12 animals/sex/dose
Five out of 12 males at 0 and 500 mg/kg bw/day were used as a recovery assessment group. In addition, 10 females/dose were administered 0 and 500 mg/kg bw/day for 42 days without mating and examined after the administration period or after a 14 day recovery period.

Control animals
yes, concurrent vehicle

Examinations

Parental animals: Observations and examinations
CAGE SIDE OBSERVATIONS: Yes
- Time schedule:
Males and females: once before the start of administration, 3 times/day during the administration period, and once during the recovery period
DETAILED CLINICAL OBSERVATIONS: Yes
- Time schedule:
Males: once before the start of administration, during the administration and recovery periods
Females: once before the start of administration, days 1, 7, 14 and 20 of gestation, and day 4 of lactation
BODY WEIGHT: Yes
- Time schedule for examinations:
Males in the main groups were weighed on days 1, 4, 8, 11, 15, 18, 22, 25, 29, 32, 36, 39 and 42 of administration and on the day of necropsy, and males and females in the recovery groups were weighed on days 1, 4, 8, 11 and 14 of recovery and on the day of necropsy in addition to the measurement days for males in the main groups.
Females in the main groups were weighed on days 1, 4, 8, 11 and 15 of administration (uncopulated animals were weighed on day 18 and 22 of administration as well), days 0, 4, 7, 11, 14, 17 and 20 of gestation, days 0 and 4 of lactation and the day of necropsy.
FOOD CONSUMPTION : Yes
- Food consumption (g/day/rat) for each animal determined from the difference of the of the previous day's feeding amount: Yes
Measurement of food consumption was conducted on all animals at the following frequencies: males in the main groups on days 1, 4, 8, 11, 15, 32, 36, 39 and 42 of administration; males and females in the recovery groups on days 1, 4, 8, 11 and 14 of recovery in addition to the measurement days for males in the main groups; and females in the main groups on days 1, 4, 8, 11 and 15 of administration, days 1, 4, 7, 11, 14, 17 and 20 of gestation and days 2 and 4 of lactation.
COMPOUND INTAKE: No
FOOD EFFICIENCY: No
WATER CONSUMPTION: No

Oestrous cyclicity (parental animals)
Vaginal smears were collected from all females in the main groups and microscopically examined every day from the day after the start of administration until the day copulation was confirmed. During the pre-mating administration period, vaginal smear pictures were classified as proestrus, estrus, metestrus or diestrus and examined for the frequency of estrus and interval between estruses (estrous cycle). During the mating period, vaginal smears were examined for the presence of sperm.

Sperm parameters (parental animals)
Parameters examined in P male parental generations: testes weight, epididymides weight

Litter observations
PARAMETERS EXAMINED:The following parameters were examined in F1 offspring: Number and sex of pups, stillbirths, live births, postnatal mortality, presence of gross anomalies, and weight gain.
GROSS EXAMINATION OF DEAD PUPS: Yes, for external and internal abnormalities.

Postmortem examinations (parental animals)
SACRIFICE: Male animals: Rats were euthanized by exsanguination under ether anesthesia on the day after the last administration. Maternal animals: Rats were euthanized by exsanguination under ether anesthesia on day 4 of lactation.

GROSS PATHOLOGY AND ORGAN WEIGHTS：Yes Brain, puitality, thyroids(including parathyroids), thymus, heart, liver, spleen, kidneys, adrenals, seminal, prostate, testes, epididymis, ovaries, uterus
HISTOPATHOLOGY: Yes Cerebrum, cerebellum (including pontocerebellar), sciatic nerve, spinal cord (thoracic), eye, optic nerve, Harder gland, pituitary, thyroid, parathyroid, adrenal glands, thymus, spleen, submandibular lymph nodes, mesenteric lymph nodes, heart, thoracic aorta, trachea, lung (including bronchial), tongue, larynx, esophagus, stomach, duodenum, jejunum, ileum (including Peyer's patches), cecum, colon, rectum, submandibular gland, sublingual gland, liver, pancreas, kidney, bladder, t

estis, ovary, epididymis, uterus, vagina, prostate, seminal vesicles (including the coagulating gland), mammary gland (groin), sternum and femur (including bone marrows), femoral skeletal muscle, skin (groin), macroscopic lesions, and parts for identification (auricles)

Postmortem examinations (offspring)
SACRIFICE: The F1 pups were euthanized on PND 4 by exsanguination under ether anesthesia.
GROSS NECROPSY: Yes

Statistics
The data were analyzed for homogeneity of variance by the Bartlett test (level of significance: 0.01, two-tailed). If variances were homogeneous, data was analyzed by the Dunnett test, whereas heterog eneous data was analyzed by a Steel test. In the recovery test, these values of two groups were anal yzed by F test and Student or Aspin-Welch t-test. Frequency data were analysed by Fisher test. Stati stical significance was set at < 5% by two-sided

Reproductive indices
) Each parameter was determined by the following equations:
Copulation index (%) = (No. of copulated animals/No. of co-housed animals) × 100
Fertility index (%) = (No. of pregnant females/No. of copulated females) × 100
Insemination index (%) = (No. of pregnant females/No. of copulated males) × 100
Duration of gestation (days) = day 0 of lactation – day 0 of gestation
Delivery index (%) = (No. of females delivered liveborn pups/No. of pregnant females) × 100
Implantation index (%) = (No. of implantation sites/No. of corpora lutea) × 100
Stillborn index (%) = (No. of stillborn pups/Total No. of pups born) × 100
Liveborn index (%) = (No. of liveborn pups/Total No. of pups born) × 100
External abnormalities (%) = (No. of pups with external abnormalities/No. of liveborn pups) × 100
Sex ratio = No. of males/(No. of males + No. of females)
Viability index (%) = (No. of surviving pus on day 4 after birth/No. of liveborn pups on day 0 after birth) × 100

Offspring viability indices
Number of live pups on day 0 of lactationBirth index (%) = (Number of live pups on day 0/Number of i mplantation sites) ×100
Live birth index (%) = (Number of live pups on day 0/Number of pups born) ×100
Pups weight on day 0 of lactationSex ratio on day 0 of lactation
Number of live pups on day 4 of lactation
Pups weight on day 4 of lactation
Sex ratio on day 4 of lactation
Viability index = (Number of live pups on day 4 after birth/Number of live pups born) ×100

Results and discussion

Results: P0 (first parental generation)

General toxicity (P0)

Clinical signs
effects observed, treatment-related

Description (incidence and severity)
see Repeated dose toxicity: oral. 001

Mortality
no mortality observed

Body weight and weight changes
no effects observed

Food consumption and compound intake (if feeding study)
no effects observed

Haematological findings
no effects observed

Clinical biochemistry findings
no effects observed

Urinalysis findings
no effects observed

Behaviour (functional findings)
no effects observed

Organ weight findings including organ / body weight ratios
effects observed, treatment-related

Description (incidence and severity)
see Repeated dose toxicity: oral. 001

Gross pathological findings
effects observed, treatment-related

Description (incidence and severity)
see Repeated dose toxicity: oral. 001

Histopathological findings: non-neoplastic
effects observed, treatment-related

Description (incidence and severity)
see Repeated dose toxicity: oral. 001

Reproductive function / performance (P0)

Reproductive function: oestrous cycle
no effects observed

Reproductive function: sperm measures
not examined

Reproductive performance
no effects observed

Details on results (P0)

1) Estrous Cycle
There were no animals showing abnormal estrous cycles, and there were no significant differences in the average length of the estrous cycle between the control group and any treatment groups.
2) Results of Mating
There were no significant differences in the number of elapsed days until copulation, copulation index, insemination index or fertility index between the control group and any treatment groups.
3) Delivery Data and Delivery
With regard to delivery status, all pregnant animals delivered normally between day 21 and day 23 of gestation excluding one dam of 100 mg/kg bw/day group. There were no significant differences

in the delivery index, duration of gestation, number of corpora lutea, number of implantation sites, implantation index, stillborn index, number of liveborn pups or liveborn index between the control g roup and any treatment groups. Significantly increase of delivery index was observed in dam receivin g 500 mg/kg bw/day, which showed high value, however this change was determined the incidental effect.

Effect levels (P0)

Key result
false

Dose descriptor
NOAEL reproduction

Effect level

500 mg/kg bw/day (actual dose received)

Sex
male/female

Basis for effect level
other: no effects on reproduction

Results: F1 generation

General toxicity (F1)

Clinical signs
no effects observed

Mortality / viability
no mortality observed

Body weight and weight changes
effects observed, treatment-related

Description (incidence and severity)
The body weights of pups on postnatal day (PND) 0 and PND 4 were decreased in pups of both sexes following 500 mg/kg bw/day dosing

Sexual maturation
not examined

Organ weight findings including organ / body weight ratios
not examined

Gross pathological findings
no effects observed

Histopathological findings
not examined

Effect levels (F1)

Key result
false

Dose descriptor
NOAEL development

Generation
F1

Effect level

100 mg/kg bw/day (actual dose received)

Sex
male/female

Basis for effect level
other: The body weights of pups on postnatal day (PND) 0 and PND 4 were decreased in pups of both sexes following 500 mg/kg bw/day dosing

Overall reproductive toxicity

Key result
false

Reproductive effects observed
not specified

Applicant's summary and conclusion

Conclusions
The NOAELs for rat reproductive toxicity and developmental toxicity were determined to be 500 mg/kg bw/day and 100 mg/kg bw/day, respectively.

Executive summary

In the combined repeated oral dose toxicity study with the reproduction/developmental toxicity screening test (OECD TG 422), reproductive parameters were not affected up to 500 mg/kg bw/day. The body weights of pups on postnatal day (PND) 0 and PND 4 were decreased in pups of both sexes following 500 mg/kg bw/day dosing. The NOAELs for rat reproductive toxicity and developmental toxicity were determined to be 500 mg/kg bw/day and 100 mg/kg bw/day, respectively.

DOMAIN

Substance

SUBSTANCE: 4-chlorobenzoyl chloride

UUID: IUC5-87ac8376-058e-4153-acc0-e69617beb555
Dossier UUID:
Author:
Date: 2022-12-16T15:00:42.549+09:00
Remarks:

Substance name
4-chlorobenzoyl chloride

Legal entity
National Institute of Health Sciences / Kawasaki / Japan

Identification of substance

Reference substance
4-chlorobenzoyl chloride / 122-01-0 / 204-515-3

EC number	EC name
204-515-3	EC Inventory
CAS number	**CAS name**
122-01-0	
IUPAC name	

Role in the supply chain

Manufacturer
false

Importer
false

Only representative
false

Downstream user
false

References

Reference Substances

REFERENCE_SUBSTANCE: 4-chlorobenzoyl chloride

UUID: IUC5-a2a9360b-d978-4902-b119-ef75ccfb7959
Dossier UUID:
Author:
Date: 2017-01-04T16:23:46.000+09:00
Remarks:

Reference substance name
4-chlorobenzoyl chloride

Inventory

Inventory number

Inventory name
4-chlorobenzoyl chloride

Inventory
EC Inventory

Inventory number
204-515-3

CAS number
122-01-0

Molecular formula
C7H4Cl2O

Description

CAS number
122-01-0

Molecular and structural information

Molecular formula
C7H4Cl2O

Test Materials

TEST_MATERIAL_INFORMATION: 4-chlorobenzoyl chloride

UUID: 3fa0a575-f847-3842-95a4-2f3f26e9dc93
Dossier UUID:
Author:
Date: 2022-12-14T13:45:20.806+09:00
Remarks:

Name
4-chlorobenzoyl chloride

Composition

Other characteristics

Details on test material
- Name of test material (as cited in study report): 4-chlorobenzoyl chloride
- Molecular weight: 175.01
- Physical state: Colorless liquid
- Analytical purity: 99.79%
- Melting point/ boiling point: 12—14°C/222°C
-Solubility: Very soluble in acetone (656 mg/mL), methanol, ethanol, ether, ketone, and toluene, and insoluble in water
- Vapor pressure: 110°C /20 mmHg
- Specific gravity: 1.377/20°C
- Odor: Very irritating odor
- Supplier: Iharanikkei Chemical Industry Co., Ltd
- Lot/batch No.: I5001
- Storage condition of test material: Room temperature

TEST_MATERIAL_INFORMATION: 4-chlorobenzoyl chloride

UUID: 208c4aae-3a09-3923-bcf9-9345059a08a2
Dossier UUID:
Author:
Date: 2022-12-14T13:46:16.567+09:00
Remarks:

Name
4-chlorobenzoyl chloride

Composition

Other characteristics

Details on test material
- Name of test material (as cited in study report): 4-chlorobenzoyl chloride
- Molecular weight: 175.01
- Physical state: Colorless liquid to white crystal mass
- Analytical purity: 99.6%
- Melting point/ boiling point: 12°C (solid point)/220-222°C
-Flash point: 118°C
- Solubility: Very soluble in acetone (656 mg/mL), methanol, ethanol, ether, ketone, and toluene, and insoluble in water
- Vapor pressure: 110°C /20 mmHg
- Specific gravity: 1.377/20°C
- Odor: Very irritating odor
- Supplier: Iharanikkei Chemical Industry Co., Ltd
- Lot/batch No.: KSSFK
- Storage condition of test material: Room temperature

TEST_MATERIAL_INFORMATION: 4-chlorobenzoyl chloride

UUID: c627e21d-6b77-3b99-a596-d268f2494fbe
Dossier UUID:
Author:
Date: 2022-12-14T13:48:46.966+09:00
Remarks:

Name
4-chlorobenzoyl chloride

Composition

Other characteristics

Details on test material
- Name of test material (as cited in study report): 4-chlorobenzoyl chloride
- Molecular weight: 175.01
- Physical state: Colorless liquid to white crystal mass
- Analytical purity: 99.6%
- Melting point/ boiling point: 12°C (solid point)/220-222°C
-Flash point: 118°C
- Solubility: Very soluble in acetone (656 mg/mL), methanol, ethanol, ether, ketone, and toluene, and insoluble in water
- Vapor pressure: 110°C /20 mmHg
- Specific gravity: 1.377/20°C
- Odor: Very irritating odor
- Supplier: Iharanikkei Chemical Industry Co., Ltd
- Lot/batch No.: KSSFK
- Storage condition of test material: Room temperature

TEST_MATERIAL_INFORMATION: 4-chlorobenzoyl chloride

UUID: 50c7e013-2743-3358-848b-8b44357c2cb7
Dossier UUID:
Author:
Date: 2022-12-14T13:47:32.636+09:00
Remarks:

Name
4-chlorobenzoyl chloride

Composition

Other characteristics

Details on test material
- Name of test material (as cited in study report): 4-chlorobenzoyl chloride
- Molecular weight: 175.01
- Physical state: Colorless liquid
- Analytical purity: 99.79%
- Melting point/ boiling point: 12—14°C/222°C
-Solubility: Very soluble in acetone (656 mg/mL), methanol, ethanol, ether, ketone, and toluene, and insoluble in water
- Vapor pressure: 110°C /20 mmHg
- Specific gravity: 1.377/20°C
- Odor: Very irritating odor
- Supplier: Iharanikkei Chemical Industry Co., Ltd
- Lot/batch No.: I5001
- Storage condition of test material: Room temperature

TEST_MATERIAL_INFORMATION: 4-chlorobenzoyl chloride

UUID: 53052755-25fd-308c-8792-dfa3751fafa4
Dossier UUID:
Author:
Date: 2022-12-14T13:48:09.468+09:00
Remarks:

Name
4-chlorobenzoyl chloride

Composition

Other characteristics

Details on test material
- Name of test material (as cited in study report): 4-chlorobenzoyl chloride
- Molecular weight: 175.01
- Physical state: Colorless liquid
- Analytical purity: 99.79%
- Melting point/ boiling point: 12—14°C/222°C
-Solubility: Very soluble in acetone (656 mg/mL), methanol, ethanol, ether, ketone, and toluene, and insoluble in water
- Vapor pressure: 110°C /20 mmHg
- Specific gravity: 1.377/20°C
- Odor: Very irritating odor
- Supplier: Iharanikkei Chemical Industry Co., Ltd
- Lot/batch No.: I5001
- Storage condition of test material: Room temperature

Literatures

LITERATURE: A combined repeated-dose/reproductive-developmental toxicity study of 4-chlorobenzoyl chloride by oral administration in rats.

UUID: 9447876a-ad3b-3485-a963-3bae6a1ea3db
Dossier UUID:
Author:
Date: 2022-12-14T14:00:48.127+09:00
Remarks:

General information

Reference Type
study report

Title
A combined repeated-dose/reproductive-developmental toxicity study of 4-chlorobenzoyl chloride by oral administration in rats.

Author
MHW (Ministry of Health and Welfare), Japan

Year
2011

Bibliographic source
Japan Existing Chemical Data Base (JECDB)

Testing facility
BoZo Research Center Inc.

Study number
R-1072

LITERATURE: In Vitro Chromosomal Aberration Test of 4-chlorobenzoyl chloride on Cultured Chinese Hamster Cells.

UUID: 93929503-6ac9-3c0b-b65a-e1c5433986f4
Dossier UUID:
Author:
Date: 2017-01-04T16:18:26.000+09:00
Remarks:

General information

Reference Type
study report

Title
In Vitro Chromosomal Aberration Test of 4-chlorobenzoyl chloride on Cultured Chinese Hamster Cells.

Author
MHW (Ministry of Health and Welfare), Japan

Year
2006

Bibliographic source
Japan Existing Chemical Data Base (JECDB)

Testing facility
Biosafety Research Center, Foods, Drugs and Pesticides (Anpyo Center)

LITERATURE: Reverse Mutation Test of 4-chlorobenzoyl chloride on Bacteria.

UUID:	3291c047-b7ef-339b-be14-a659befe31ba
Dossier UUID:	
Author:	
Date:	2017-01-04T16:18:22.000+09:00
Remarks:	

General information

Reference Type
study report

Title
Reverse Mutation Test of 4-chlorobenzoyl chloride on Bacteria.

Author
MHW (Ministry of Health and Welfare), Japan

Year
2006

Bibliographic source
Japan Existing Chemical Data Base (JECDB)

Testing facility
Biosafety Research Center, Foods, Drugs and Pesticides (Anpyo Center)

LITERATURE: Single Dose Oral Toxicity Test of 4-chlorobenzoyl chloride in Rats

UUID:	9bba3071-8e05-38a8-8af7-4bef22a4ff1a
Dossier UUID:	
Author:	
Date:	2017-01-04T16:17:31.000+09:00
Remarks:	

General information

Reference Type
study report

Title
Single Dose Oral Toxicity Test of 4-chlorobenzoyl chloride in Rats

Author
MHW (Ministry of Health and Welfare), Japan

Year
2007

Bibliographic source
Japan Existing Chemical Data Base (JECDB)

Testing facility
Biosafety Research Center, Foods, Drugs and Pesticides (An-Pyo Center)

Legal Entities

LEGAL_ENTITY: National Institute of Health Sciences

UUID: IUC4-b036ff75-0f3c-323b-b200-ed5f46cf5101
Dossier UUID:
Author:
Date: 2022-11-07T15:49:29.000+09:00
Remarks:

General information

Legal entity name
National Institute of Health Sciences

Remarks
Disclaimer: The contents in this document were created based on the MHLW (Ministry of Health, Labour and Welfare) peer reviewed study reports (in Japanese) in JECDB (Japan Existing Chemical Database) at http://dra4.nihs.go.jp/mhlw_data/jsp/SearchPageENG.jsp. Authorship is in the Division of Risk Assessment, the National Institute of Health Sciences, and the contents do not reflect any o fficial MHLW opinions or any other regulatory policies.

Address

Address 1
Tonomachi 3-25-26

Address 2
Kawasaki-ku

Postal code
210-9501

Town
Kawasaki

Region / State
Kanagawa

Country
Japan
JP

Identifiers

Other IT system identifiers

IT system LEO **ID** 10767
IT system IUCLID4

ID
16558402024DIV750