Date of issue for the 1st edition : 25/Mar/2014
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Safety Data Sheet

Section 1. Identification of the substance/mixture and of the company/undertaking

Product identifier:

Product name: Benzoyl chloride

Reference number(SDS):19260jis_E-3

Product type:

Reagent

Details of the supplier of the safety data sheet

Manufacturer/Supplier: JUNSEI CHEMICAL CO., LTD.

Address: 1-6, Ohmano-cho, Koshigaya-shi, Saitama 343-0844, Japan

Division: Quality Assurance Department

Telephone number: +81-48-986-6161

FAX: +81-48-989-2787

e-mail address: shiyaku-t@junsei.co.jp

Section 2. Hazards identification

GHS classification and label elements of the product

Classification of the substance or mixture

PHYSICAL AND CHEMICAL HAZARDS

Flammable liquids: Category 4

HEALTH HAZARDS

Acute toxicity (Oral): Category 4

Acute toxicity (Dermal): Category 3

Acute toxicity (Inhalation): Category 2

Skin corrosion/irritation: Category 1

Serious eye damage/eye irritation: Category 1

Skin sensitization: Category 1

Carcinogenicity: Category 2

Specific target organ toxicity - single exposure: Category 2 (respiratory organs)

Specific target organ toxicity - repeated exposure: Category 1 (respiratory organs)

ENVIRONMENT HAZARDS

Hazardous to the aquatic environment, short-term (acute): Category 1

(Note) GHS classification without description: Not classified/Classification not possible

Label elements

Signal word: Danger

HAZARD STATEMENT

H227-Combustible liquid

H302-Harmful if swallowed

H311-Toxic in contact with skin

H330-Fatal if inhaled

H314-Causes severe skin burns and eye damage

H318-Causes serious eye damage

H317-May cause an allergic skin reaction

H351-Suspected of causing cancer

H371-May cause damage to organs

H372-Causes damage to organs through prolonged or repeated exposure
H400-Very toxic to aquatic life

PRECAUTIONARY STATEMENT

Prevention

Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Avoid release to the environment.
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Do not breathe vapors.
In case of inadequate ventilation wear respiratory protection.
Use only outdoors or in a well-ventilated area.
Wash contaminated parts thoroughly after handling.
Contaminated work clothing should not be allowed out of the workplace.
Wear protective gloves/protective clothing/eye protection/face protection.
Use personal protective equipment as required.
Do not eat, drink or smoke when using this product.

Response

In case of fire: Use alcohol-resistant foam, dry powder, CO2 to extinguish.
Collect spillage.
Get medical advice/attention if you feel unwell.
IF exposed or concerned: Get medical advice/attention.
Immediately call a POISON CENTER/doctor/physician.
Call a POISON CENTER/doctor/physician if you feel unwell.
IF exposed or concerned: Call a POISON CENTER/doctor/physician.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
IF ON SKIN: Wash with plenty of soap and water.
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
If skin irritation or rash occurs: Get medical advice/attention.
Take off immediately all contaminated clothing and wash it before reuse.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
IF SWALLOWED: Call a POISON CENTER/doctor/physician if you feel unwell.
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

Storage

Store in a well-ventilated place. Keep container tightly closed.
Store locked up.

Disposal

Dispose of contents/container in accordance with local/national regulation.

Specific Physical and Chemical hazards

Heating may cause fire.

Section 3. Composition/information on ingredients

Mixture/Substance selection:

Substance

Ingredient name:Benzoyl chloride
Content (%):98.0 <
Chemical formula:C7H5ClO
Chemicals No, Japan:3-1387
CAS No.:98-88-4
MW:140.57
ECNO:202-710-8

Note : The figures shown above are not the specifications of the product.

Section 4. First-aid measures

Descriptions of first-aid measures

General measures

Get medical advice/attention if you feel unwell.
Immediately call a POISON CENTER/doctor/physician.
Keep victim warm and quiet.
Call emergency medical service.
Effects of exposure (inhalation, ingestion or skin contact) to substance may be delayed.
Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

IF INHALED

Remove person to fresh air and keep comfortable for breathing.
Give artificial respiration if victim is not breathing.
Administer oxygen if breathing is difficult.
Call a POISON CENTER/doctor/physician if you feel unwell.

IF ON SKIN (or hair)

Take off immediately all contaminated clothing. Rinse skin with water or shower.
Wash with plenty of soap and water.
If skin irritation or rash occurs: Get medical advice/attention.
Remove and isolate contaminated clothing and shoes.
Removal of solidified molten material from skin requires medical assistance.
For minor skin contact, avoid spreading material on unaffected skin.

IF IN EYES

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/attention.

IF SWALLOWED

Rinse mouth. Do NOT induce vomiting.
Call a POISON CENTER/doctor/physician if you feel unwell.

Most important symptoms and effects, both acute and delayed

(Symptoms when inhalation or ingestion)

Burning sensation. Cough. Shortness of breath. Sore throat. Laboured breathing. Abdominal pain. Shock or collapse.

(Symptoms when skin and/or eye contact)

Conjunctival redness of the eyes. Redness of the skin. Severe deep burns. Pain. Burning sensation of the skin. Blisters.

Indication of any immediate medical attention and special treatment needed

Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media

In case of fire, use alcohol-resistant foam, dry powder, CO2 to extinguish.

Unsuitable extinguishing media

Never use water.

Specific hazards arising from the substance or mixture

Containers may explode when heated.
Fire may produce irritating, corrosive and/or toxic gases.
Runoff from fire control or dilution water may cause pollution.
Containers may explode when heated or if contaminated with water.

Advice for firefighters

Specific fire-fighting measures

Evacuate non-essential personnel to safe area.

Keep drums, etc., cool by spraying with water. NO direct contact with water.

Special protective equipment and precautions for fire-fighters

Wear fire resistant or flame retardant clothing.

Wear protective gloves/protective clothing/eye protection/face protection.

Firefighters should wear self-contained breathing apparatus with full face peace operated positive pressure mode.

Section 6. Accidental release measures

Personnel precautions, protective equipment and emergency procedures

Keep unauthorized personnel away.

In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.

Ventilate area until material pick up is complete.

Wear proper protective equipment.

PUBLIC SAFTY: Ventilate closed spaces before entering.

Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.

EVACUATION : Spill: See the Table of Initial Isolation and Protective Action Distances for highlighted substances. For non-highlighted substances, increase, in the downwind direction, as necessary, the isolation distance shown under “PUBLIC SAFETY”.

Environmental precautions

Avoid release to headsprings, rivers, lakes, ocean and groundwater.

Methods and materials for containment and cleaning up

Cover with DRY earth, DRY sand, or other non-combustible material followed with plastic sheet to minimize spreading or contact with rain.

Use clean non-sparking tools to collect material and place it into loosely covered plastic containers for later disposal.

Preventive measures for secondary accident

Collect spillage.

Stop leak if you can do it without risk.

Keep combustibles (wood, paper, oil, etc.) away from spilled material.

Use water spray to reduce vapors; do not put water directly on leak, spill area or inside container.

Keep out of low areas.

Section 7. Handling and storage

Precautions for safe handling

Preventive measures

(Exposure Control for handling personnel)

Do not breathe vapors.

(Protective measures against fire and explosion)

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

(Exhaust/ventilator)

Exhaust/ventilator should be available.

(Safety treatments)

Avoid contact with skin.

Avoid contact with eyes.

Safety Measures

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

Use only outdoors or in a well-ventilated area.

Wear protective gloves/protective clothing/eye protection/face protection.
Use personal protective equipment as required.
When using do not eat, drink or smoke.

Any incompatibilities

Bases, Strong oxidizing agents, Water, Metal salts, Alcohols, Amines, Dimethyl sulphoxide should not be mixed with the chemicals.

Advice on general occupational hygiene

Wash contaminated parts thoroughly after handling.
Do not eat, drink or smoke when using this product.
Contaminated work clothing should not be allowed out of the workplace.
Take off immediately all contaminated clothing and wash it before reuse.

Storage

Conditions for safe storage

Store in a well-ventilated place. Keep container tightly closed.
Keep cool. Protect from sunlight.
Store in accordance with local/national regulation.
Store locked up.

Container and packaging materials for safe handling data is not available.

Specific end use(s)

See information in Section 7.1 and 7.2 for handling and storage recommendations. See Section 8 for exposure controls and personal protection recommendations.

Section 8. Exposure controls/personal protection

Control parameters

Control value in MHLW is not available.

Adopted value

Adopted value in JSOH is not available.
ACGIH(1995) STEL: C 0.5ppm (URT & eye irr)

Exposure controls

Appropriate engineering controls

Do not use in areas without adequate ventilation.
Eye wash station should be available.
Washing facilities should be available.

Individual protection measures

Respiratory protection

Wear respiratory protection.
Wear positive pressure self-contained breathing apparatus (SCBA).

Hand protection

Wear protective gloves. Recommended material(s): viton
Inspect before use and replace worn or damaged gloves.
Contact the glove manufacturer for specific advice on glove selection and breakthrough times for your use conditions.

Eye protection

Wear chemical safety goggle.
Wear eye/face protection.

Skin and body protection

Wear impervious clothing and boots in case of repeated or prolonged treatment.

Section 9. Physical and Chemical Properties

Information on basic physical and chemical properties

Physical state: Fuming liquid
Color: Colorless

Odor: Irritant odor
Odor threshold data is not available.
Melting point/Freezing point: −1℃
Boiling point or initial boiling point: 197.2℃
Boiling range data is not available.
Flammability (gases, liquids and solids): Ignitable
Lower and upper explosion limit/flammability limit:
Lower explosion limit: 2.5 vol %
Upper explosion limit: 27 vol %
Flash point: (C.C.) 72℃
Auto-ignition temperature: 197.2℃
Decomposition temperature data is not available.
Self-Accelerating Decomposition Temperature/SADT data is not available.
pH data is not available.
Dynamic viscosity data is not available.
Kinematic viscosity data is not available.
Solubility:
Solubility in water: Reaction
Solubility in solvent: Miscible with ether, benzene, carbon disulfide.
n-Octanol/water partition coefficient data is not available.
Vapor pressure: 50 Pa （20℃）
Density and/or relative density: 1.21(20℃)
Relative vapor density (Air=1): 4.88
Relative density of the Vapor/air - mixture at 20℃ (Air = 1) data is not available.
Particle characteristics data is not available.

Other information
Critical temperature data is not available.
Evaporation rate data is not available.
VOC data is not available.
Other information is not available.

Section 10. Stability and Reactivity

Reactivity
React with water.

Chemical stability
Stable under normal storage/handling conditions.

Possibility of hazardous reactions
The vapour is heavier than air.
Decomposes on contact with hot surfaces or flames. This produces highly toxic and corrosive gases.
Decomposes rapidly on heating and on contact with alkalis, alcohols, amines and dimethyl sulphoxide. This generates fire and explosion hazard.
Reacts violently with strong oxidants.
Reacts with water and steam. This produces heat and corrosive fumes.
Attacks many metals. This produces flammable/explosive gas.
Contact with metal salts generates flammable/explosive gas.

Conditions to avoid
Contact with incompatible materials.
Open flames. Heating. Moisture

Incompatible materials
Bases, Strong oxidizing agents, Alcohols, Amines, Dimethyl sulphoxide, Water, Metal salts.

Hazardous decomposition products
Carbon oxides, Phosgene, Hydrogen chloride, Hydrogen gas, Chlorides

Section 11. Toxicological Information

Information on toxicological effects

Acute toxicity

Acute toxicity (Oral)

[Product]

Category 4, Harmful if swallowed

[Data for components of the product]

[GHS Cat. Japan, base data]

female rat LD50=1900 mg/kg (DFGOT vol.6, 1994)

Acute toxicity (Dermal)

[Product]

Category 3, Toxic in contact with skin

[Data for components of the product]

[GHS Cat. Japan, base data]

rabbit LD50=790mg/kg (MAK/BAT, 2004; ACGIH 7th, 2001; MOHL primary risk assessment , 2008)

Acute toxicity (Inhalation)

[Product]

Category 2, Fatal if inhaled

[Data for components of the product]

[GHS Cat. Japan, base data]

vapor: rat LC50=247ppm/4hr (ACGIH 7th, 2001; MHLW risk assessment, 2008)

Irritant properties

Skin corrosion/irritation

[Product]

Category 1, Causes severe skin burns and eye damage

[Data for components of the product]

[GHS Cat. Japan, base data]

human : corrosive (NICNAS IMAP, Accessed Aug. 2018; Vincoli, 1996; Bruze et al, 2000)

Serious eye damage/irritation

[Product]

Category 1, Causes serious eye damage

[Data for components of the product]

[GHS Cat. Japan, base data]

rabbit : corrosive (HSDB, Accessed Aug. 2018)

Sensitization

Respiratory sensitization

[Product]

Classification not possible (Insufficient data available or no data available).

[Data for components of the product]

No data available.

Skin sensitization

[Product]

Category 1, May cause an allergic skin reaction

[Data for components of the product]

[GHS Cat. Japan, base data]

cat. 1; guinea pig : NICNAS IMAP, Accessed Aug. 2018 et al.

Germ cell mutagenicity

[Product]

Classification not possible (Insufficient data available or no data available).

[Data for components of the product]

No data available.

Carcinogenicity
[Product]
Category 2, Suspected of causing cancer
[Data for components of the product]
[GHS Cat. Japan, base data]
cat.2; (NICNAS IMAP, Accessed Jul. 2018 et al.)
[IARC]
Group 2A : Probably carcinogenic to humans
[ACGIH]
A4(1995) : Not Classifiable as a Human Carcinogen
[JSOH]
Group 2B: The agents which are probably or possibly carcinogenic to humans

Reproductive toxicity
[Product]
Classification not possible (Insufficient data available or no data available).
[Data for components of the product]
No data available.

Specific target organ toxicity (STOT)
STOT-single exposure
[Product]
Category 2, May cause damage to organs
[Data for components of the product]
[cat.2]
[GHS Cat. Japan, base data]
respiratory system (ACGIH 7th, 2001; HSDB, Accessed Aug. 2018)

STOT-repeated exposure
[Product]
Category 1, Causes damage to organs through prolonged or repeated exposure
[Data for components of the product]
[cat.1]
[GHS Cat. Japan, base data]
respiratory system (ACGIH 7th, 2001; HSDB, Accessed Aug. 2018)

Aspiration hazard
[Product]
Classification not possible (Insufficient data available or no data available).
[Data for components of the product]
No data available.

Section 12. Ecological Information

Toxicity
Aquatic toxicity
[Product]
Category 1, Very toxic to aquatic life
[Data for components of the product]
Hazardous to the aquatic environment, short-term (acute)
[GHS Cat. Japan, base data]
Crustacea (grass shrimp) LC50=0.12mg/L/96hr (ECETOC TR91, 2003)

Water solubility
[Data for components of the product]
reaction (ICSC, 2000)

Persistence and degradability
Persistence and degradability data is not available.

Bioaccumulative potential

Bioaccumulative potential data is not available.

Mobility in soil

Mobility in soil data is not available.

Other adverse effects

Ozone depleting chemical data is not available.

Section 13. Disposal considerations

Description of waste residues and information on their safe handling and methods of disposal, including the disposal of any contaminated packaging

Waste treatment methods

Avoid release to the environment.

Dispose of contents/container in accordance with local/national regulation.

Section 14. Transport Information

UN No., UN CLASS

UN Number or ID Number : 1736

UN Proper Shipping Name : BENZOYL CHLORIDE

Class or division (Transport hazard class) : 8

Packing group : II

ERG GUIDE No.: 137

IMDG Code (International Maritime Dangerous Goods Regulations)

UN Number or ID Number : 1736

UN Proper Shipping Name : BENZOYL CHLORIDE

Class or division (Transport hazard class) : 8

Packing group : II

IATA (Dangerous Goods Regulations)

UN Number or ID Number : 1736

UN Proper Shipping Name : BENZOYL CHLORIDE

Class or division (Transport hazard class) : 8

Hazard labels : Corrosive

Packing group : II

Environmental hazards

Marine pollutants (yes/no) : yes

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable to Transport in bulk according to Annex II of MARPOL and the IBC Code

MARPOL Annex V - HME (Harmful to the Marine Environment)

Specific target organ toxicity - repeated exposure: cat.1

Benzoyl chloride

Hazardous to the aquatic environment - short-term (acute): cat.1

Benzoyl chloride

Section 15. Regulatory Information

Safety, health and environmental regulations/legislation specific for the substance or mixture

U.S. Toxic Substances Control Act (TSCA) Inventory

Chemicals listed in TSCA Inventory

98-88-4

All components are listed or exempted.

Superfund Amendments and Reauthorizations Act (SARA), Title III

SARA 313 (TRI)

Benzoyl chloride

Other regulatory information

We are not able to check up the regulatory information with regard to the substances in your country or region, therefore, we request this matter would be filled by your responsibility.
Regulatory information with regard to this substance in your country or in your region should be examined by your own responsibility.
Ensure this material in compliance with federal requirements and ensure conformity to local regulations.
Regulatory information in this section are limited to intentional ingredient(s), but does not contain information on non-intentional ingredients or impurities which are not informed by supplier(s).

Chemical safety assessment

Advice on safe handling for this product can be found in sections 7 and 8 of this SDS.

Section 16. Other information

GHS classification and labelling

H227-Flammable liquids, Category 4: H227 Combustible liquid
H302-Acute toxicity, Category 4: H302 Harmful if swallowed
H311-Acute toxicity, Category 3: H311 Toxic in contact with skin
H330-Acute toxicity, Category 2: H330 Fatal if inhaled
H314-Skin corrosion/irritation, Category 1: H314 Causes severe skin burns and eye damage
H318-Serious eye damage/eye irritation, Category 1: H318 Causes serious eye damage
H317-Skin sensitization, Category 1: H317 May cause an allergic skin reaction
H351-Carcinogenicity, Category 2: H351 Suspected of causing cancer
H371-STOT - single exposure, Category 2: H371 May cause damage to organs
H372-STOT - Repeated exposure, Category 1: H372 Causes damage to organs through prolonged or repeated exposure
H400-Hazardous to the aquatic environment, short-term (acute), Category 1: H400 Very toxic to aquatic life

References and sources for data

Globally Harmonized System of classification and labelling of chemicals, UN
Recommendations on the TRANSPORT OF DANGEROUS GOODS 22nd edit., 2021 UN
IMDG Code, 2020 Edition (Incorporating Amendment 40-20)
IATA Dangerous Goods Regulations (64th Edition) 2023
2020 EMERGENCY RESPONSE GUIDEBOOK (US DOT)
2022 TLVs and BEIs. (ACGIH)
JIS Z 7252 : 2019
JIS Z 7253 : 2019
2022 Recommendation on TLVs (JSOH)
Notification No. 0111-1 (January 11, 2022), Chemical Hazards Control Division, Industrial Safety and Health Department, Labour Standards Bureau, MHLW in Japan
Supplier's data/information
Chemicals safety data management system "GHS Assistant" Version 4.21 (https://www.asahi-ghs.com/)
NITE Chemical Risk Information Platform "NITE-CHRIP"
(https://www.nite.go.jp/en/chem/chrip/chrip_search/systemTop)
GHS Classification Guidance for Enterprises 2019 Revised Edition (Ver. 2.0) (Mar. 2020, METI)

Abbreviations and acronyms

SDS (Safety Data Sheet)
LD50 (Lethal Dose, 50%)
LC50 (Lethal Concentration, 50%)
IARC (International Agency for Research on Cancer)
ACGIH (American Conference of Governmental Industrial Hygienists)
EPA (US Environmental Protection Agency)

NTP (US National Toxicology Program)
JSOH (Japan Society for Occupational Health)
EU (European Union)
EC50 (Effective Concentration, 50%)
NOEC (No Observed Effect Concentration)
BOD (Biochemical Oxygen Demand)
COD (Chemical Oxygen Demand)
BCF (Bioconcentration Factor)
anh (anhydride)

General Disclaimer

This data sheet was created based on the information we currently have and may be revised according to new information. In addition, the precautions apply only to normal handling, and in the case of special handling, please make adequate countermeasure to maintain your safety.

The data given here is based on current knowledge and experience. The purpose of this Safety Data Sheet is to describe the products in terms of their safety requirements. The data does not signify any warranty with regard to the products' properties.

The GHS classification data given here is based on current Japan official data (NITE published in 2021).