



Safety Data Sheet

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

Product identifier:

Product name: Benzoyl chloride

SDS No. : 0823E-3

Details of the supplier of the safety data sheet

Manufacturer/Supplier: KISHIDA CHEMICAL CO., LTD.

Address: 3-1, Honmachibashi, Chuo-ku, Osaka, JAPAN

Division: Safety Management Dept. of Chemicals

Telephone number: +81-6-6946-8061

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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 apparatus)

Specific target organ toxicity – repeated exposure: Category 1(respiratory apparatus)

ENVIRONMENT HAZARDS

Hazardous to the aquatic environment (Acute): Category 1

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

Label elements



Signal word: Danger

HAZARD STATEMENT

Combustible liquid

Harmful if swallowed

Toxic in contact with skin

Fatal if inhaled

Causes severe skin burns and eye damage

Causes serious eye damage

May cause an allergic skin reaction

Suspected of causing cancer

May cause damage to organs after single exposure(respiratory apparatus)

Causes damage to organs through prolonged or repeated exposure(respiratory apparatus)

Very toxic to aquatic life

**PRECAUTIONARY STATEMENT****Prevention**

- Avoid release to the environment.
- Keep away from heat/sparks/open flames/hot surfaces. – No smoking.
- Do not breathe dust/fume/gas/mist/vapors/spray.
- In case of inadequate ventilation wear respiratory protection. (as specified by the manufacturer/supplier or the competent authority.)
- 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.
- Do not eat, drink or smoke when using this product.

Response

- In case of fire: Use appropriate media other than water for extinction.
- Collect spillage.
- Get medical advice/attention if you feel unwell.
- IF EXPOSED OR CONCERNED: Get medical advice/attention.
- 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/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 or 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.

Disposal

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

Specific Physical and Chemical hazards

- Heating may cause fire.

3. Composition/information on ingredients**Mixture/Substance selection:****Substance**

Ingredient name: Benzoyl chloride

Content (%): 98(min)

Chemical formula: C₆H₅COCl

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.

4. First-aid measures**Descriptions of first-aid measures****General measures**

- Get medical attention/advice if you feel unwell.

IF INHALED

- Remove person to fresh air and keep comfortable for breathing.



Call a POISON CENTER or doctor/physician if you feel unwell.

IF ON SKIN (or hair)

Take off immediately all contaminated clothing. Rinse skin with water/shower.

Wash with plenty of soap and water.

If skin irritation or rash occurs: Get medical advice/attention.

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 or doctor/physician if you feel unwell.

5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media

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

Unsuitable extinguishing media

Indoor firefighting equipment or outdoor firefighting equipment

Sprinkler equipment

Dry-powder firefighting equipment – except for phosphate etc.,hydrogen carbonate etc.

Straight stream water extinguisher

Water mist extinguisher

Reinforcing liquid jet extinguisher

Dry-powder extinguisher – except for phosphate etc.,hydrogen carbonate etc.

Bucket of water or tank of water

Specific hazards arising from the substance or mixture

Containers may explode when heated.

Fire may produce irritating, corrosive and/or toxic gases.

Advice for firefighters

Specific fire-fighting measures

Evacuate non-essential personnel to safe area.

Special protective equipment and precautions for fire-fighters

Wear fire/flame resistant/retardant clothing.

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

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

6. Accidental release measures

Personnel precautions, protective equipment and emergency procedures

Ventilate area until material pick up is complete.

Wear proper protective equipment.

Environmental precautions

Prevent spills from entering sewers, watercourses or low areas.

Methods and materials for containment and cleaning up

Absorb spill with inert material (dry sand, earth, et al), then place in a chemical waste container.

Preventive measures for secondary accident

Collect spillage.



7. Handling and storage

Precautions for safe handling

Preventive measures

(Exposure Control for handling personnel)

Do not breathe dust/fume/gas/mist/vapors/spray.

(Protective measures against fire and explosion)

Keep away from heat/sparks/open flames/hot surfaces. – No smoking.

(Exhaust/ventilator)

Exhaust/ventilator should be available.

(Safety treatments)

Avoid contact with skin.

Avoid contact with eyes.

Safety Measures

Use only outdoors or in a well-ventilated area.

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

When using do not eat, drink or smoke.

Any incompatibilities

See "10.Stability and Reactivity"

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

Keep container tightly closed.

Store in a cool, dry place. Do not store in direct sunlight.

Keep under lock and key.

Container and packaging materials for safe handling

Glass

Iron

8. Exposure controls/personal protection

Control parameters

Adopted value

(Benzoyl chloride)

ACGIH(1992) 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.

Hand protection

Wear protective gloves.

Eye protection

Wear eye/face protection.



9. Physical and Chemical Properties

Information on basic physical and chemical properties

Physical state: Liquid

Color: Colorless, clear

Odor: Pungent odor

pH data is not available.

Boiling point or initial boiling point: 197.2°C

Boiling range data is not available.

Melting point/Freezing point: -1°C

Decomposition temperature data is not available.

Flammability (gases, liquids and solids) data is not available.

Flash point: (Benzoyl chloride)(C.C.) 72°C

Auto-ignition temperature: 197.2°C

Lower and upper explosion limit/flammability limit:

Lower explosion limit: 2.5 vol %

Upper explosion limit: 27 vol %

Vapor pressure: 50 Pa (20°C)

Relative vapor density (Air=1): 4.88

Density and/or relative density: 1.21

Kinematic viscosity data is not available.

Solubility:

Solubility in water: Reaction

n-Octanol/water partition coefficient data is not available.

No Particle characteristics data is not available.

10. Stability and Reactivity

Reactivity

Not available.

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 (phosgene and hydrogen chloride). 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 (hydrogen chloride). Attacks many metals. This produces flammable/explosive gas (hydrogen). Contact with metal salts generates flammable/explosive gas (hydrogen). (ICSC 1015)

Conditions to avoid

Contact with incompatible materials.

Contact with fire source.

Incompatible materials

Bases, Strong oxidizing agents, Alcohols, Amines, Dimethyl sulphoxide, Metals, Metal salts

Hazardous decomposition products

Phosgene, Hydrogen chloride, Hydrogen



11. Toxicological Information

Information on toxicological effects

Acute toxicity

Acute toxicity (Oral)

[GHS Cat. Japan, base data]

(Benzoyl chloride)

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

Acute toxicity (Dermal)

[GHS Cat. Japan, base data]

(Benzoyl chloride)

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

Acute toxicity (Inhalation)

[GHS Cat. Japan, base data]

(Benzoyl chloride)

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

Irritant properties

Skin corrosion/irritation

[GHS Cat. Japan, base data]

(Benzoyl chloride)

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

Serious eye damage/irritation

[GHS Cat. Japan, base data]

(Benzoyl chloride)

rabbit corrosive (HSDB, Accessed Aug. 2018)

Sensitization

Skin sensitization

[GHS Cat. Japan, base data]

(Benzoyl chloride)

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

Mutagenic effects data is not available.

Carcinogenicity

[GHS Cat. Japan, base data]

(Benzoyl chloride)

cat.2; (NICNAS IMAP, Accessed Jul. 2018 et al.)

(Benzoyl chloride)

IARC-Gr.2A : Probably carcinogenic to humans

(Benzoyl chloride)

ACGIH-A4(1992) : Not Classifiable as a Human Carcinogen

Reproductive toxicity data is not available.

STOT

STOT-single exposure

[cat.2]

[GHS Cat. Japan, base data]

(Benzoyl chloride)

respiratory apparatus (ACGIH 7th, 2001; HSDB, Accessed Aug. 2018)

STOT-repeated exposure

[cat.1]

[GHS Cat. Japan, base data]

(Benzoyl chloride)

respiratory apparatus (ACGIH 7th, 2001; HSDB, Accessed Aug. 2018)

Aspiration hazard data is not available.



12. Ecological Information

Ecotoxicity

Aquatic toxicity

Very toxic to aquatic life

Hazardous to the aquatic environment (Acute)

[GHS Cat. Japan, base data]

(Benzoyl chloride)

Crustacea (grass shrimp) LC50=0.12mg/L/96hr (ECETOC TR91, 2003)

Water solubility

(Benzoyl chloride)

reaction (ICSC, 2000)

Persistence and degradability

(Benzoyl chloride)

Hydrolyze and generate benzoic acid : 85% (Registered chemicals data check & review)

Bioaccumulative potential

(Benzoyl chloride)

log Pow=1.44 (PHYSPROP DB, 2005)

Mobility in soil

Mobility in soil data is not available.

Other adverse effects

Ozone depleting chemical data is not available.

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 (- if this is not the intended use).

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

14. Transport Information

UN No.: 1736

Proper Shipping Name :

BENZOYL CHLORIDE

Class or division : 8

Packing group : II

ERG GUIDE No.: 137

IMDG Code (International Maritime Dangerous Goods Regulations)

UN No.: 1736

Proper Shipping Name :

BENZOYL CHLORIDE

Class or division : 8

Packing group : II

IATA Dangerous Goods Regulations

UN No.: 1736

Proper Shipping Name :

BENZOYL CHLORIDE

Class or division : 8

Hazard labels : Corrosive

Packing group : II

Environmental hazards

MARPOL Annex III - Prevention of pollution by harmful substances



Marine pollutants (yes/no) : yes
MARPOL Annex V – Prevention of pollution by garbage discharge
Specific target organ toxicity – repeated exposure: cat.1
Benzoyl chloride
Hazardous to the aquatic environment – acute hazard: cat.1
Benzoyl chloride

15. Regulatory Information

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

US Federal Regulations

Chemicals listed in TSCA Inventory

Benzoyl chloride

Other regulatory information

Ensure this material in compliance with federal requirements and ensure conformity to local regulations.

16. Other information

GHS classification and labelling

Flam. Liq. 4: H227 Combustible liquid

Acute Tox. 4: H302 Harmful if swallowed

Acute Tox. 3: H311 Toxic in contact with skin

Acute Tox. 2: H330 Fatal if inhaled

Skin Corr. 1: H314 Causes severe skin burns and eye damage

Eye Dam. 1: H318 Causes serious eye damage

Skin Sens. 1: H317 May cause an allergic skin reaction

Carc. 2: H351 Suspected of causing cancer

STOT SE 2: H371 May cause damage to organs after single exposure

STOT RE 1: H372 Causes damage to organs through prolonged or repeated exposure

Aquatic Acute 1: H400 Very toxic to aquatic life

Reference Book

Globally Harmonized System of classification and labelling of chemicals, (6th ed., 2015), UN

Recommendations on the TRANSPORT OF DANGEROUS GOODS 20th edit., 2017 UN

IMDG Code, 2018 Edition (Incorporating Amendment 39-18)

IATA Dangerous Goods Regulations (61th Edition) 2020

Classification, labelling and packaging of substances and mixtures (Table 3 ECNO6182012)

2016 EMERGENCY RESPONSE GUIDEBOOK (US DOT)

2019 TLVs and BEIs. (ACGIH)

<http://monographs.iarc.fr/ENG/Classification/index.php>

Supplier's data/information

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 2018).