

Safety Data Sheet

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

Product identifier:

Product name: Benzyl chloride

Reference number(SDS):19235jis_J_E1-2

Product type:

Reagent

Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses of the product: Research and Development

Uses advised against: Do not use for other purposes.

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 (Inhalation): Category 1

Skin corrosion/irritation: Category 1

Serious eye damage/eye irritation: Category 1

Carcinogenicity: Category 1B

Specific target organ toxicity – single exposure: Category 1 (respiratory organs, nervous system)

Specific target organ toxicity – repeated exposure: Category 1 (liver, nervous system, respiratory system)

Specific target organ toxicity – repeated exposure: Category 2 (heart)

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

H330-Fatal if inhaled

H314-Causes severe skin burns and eye damage

H318-Causes serious eye damage

H350-May cause cancer

H370-Causes damage to organs

Benzyl chloride ,JUNSEI CHEMICAL CO., LTD.,19235jis_J_E1-2,11/Jun/2025

H372-Causes damage to organs through prolonged or repeated exposure

H373-May cause 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 dust/fume/gas/mist/vapors/spray.

In case of inadequate ventilation wear respiratory protection.

Use only outdoors or in a well-ventilated area.

Wash contaminated parts thoroughly after handling.

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 foam, dry powder, CO2, dry sand to extinguish.

Collect spillage.

Specific treatment is urgent.

Specific treatment is required.

Get medical advice/attention if you feel unwell.

IF exposed or concerned: Get medical advice/attention.

Immediately call a POISON CENTER/doctor/physician.

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 (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.

Wash contaminated clothing 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: Benzyl chloride

Content (%): 98.0 <

Chemical formula: C7H7Cl

ENCS: 3-39;3-102

CAS No.: 100-44-7

MW: 126.59

EC No.: 202-853-6

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.
Immediately call a POISON CENTER/doctor/physician.
IF INHALED: 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.
Immediately call a POISON CENTER/doctor/physician.
If skin irritation or rash occurs: Get medical advice/attention.
For minor skin contact, avoid spreading material on unaffected skin.
Remove and isolate contaminated clothing and shoes.

IF IN EYES

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

IF SWALLOWED

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

Most important symptoms and effects, both acute and delayed

(Symptoms when inhalation or ingestion)

Nausea. Abdominal pain. Diarrhoea. Headache. Cough. Dizziness. Burning sensation. Vomiting.

(Symptoms when skin and/or eye contact)

Conjunctival redness of the eyes. Redness of the skin. Severe deep burns of the eyes. Pain.
Watering of the eyes. Blurred vision.
※May be absorbed into the skin.

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.
Specific treatment is urgent.

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media

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

Unsuitable extinguishing media

Do not use direct water jet.
Water may be effective for cooling, but may not effect extinguishment.

Specific hazards arising from the substance or mixture

Containers may explode when heated.

Benzyl chloride ,JUNSEI CHEMICAL CO., LTD.,19235jis_J_E1-2,11/Jun/2025

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

Runoff from fire control or dilution water may cause pollution.

Advice for firefighters

Specific fire-fighting measures

Evacuate non-essential personnel to safe area.

Cool container with water spray.

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 a full facepiece operated in the 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 SAFETY: 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

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

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

All equipment used when handling the product must be grounded.

Preventive measures for secondary accident

Collect spillage.

Stop leak if you can do it without risk.

ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).

Prevent entry into waterways, sewers, basements or confined areas.

DO NOT GET WATER on spilled substance or inside containers.

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

- Acids, Strong oxidizing agents, Metals 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.
- Wash contaminated clothing 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

- Keep only in original packaging.

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 and Concentration standard value under ISHA**

- Not established

Occupational Exposure Limit**JSOH**

- Not established

ACGIH

- TWA: 1ppm (Eye, skin & URT 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**

- Select and wear respiratory protection in accordance with approved standards (e.g. JIS T8150).
- Recommended respiratory protection: 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.
- Chemical-resistant, impervious gloves complying with an approved standard (e.g. JIS T8116) should be used.

Eye protection

- Wear chemical safety goggle.
- Wear eye/face protection in accordance with approved standards (e.g. JIS T8147).

Skin and body protection

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

Personal protective equipment for the body and skin should be selected based on the task being performed and the risks involved.

Section 9. Physical and Chemical Properties**Information on basic physical and chemical properties**

Physical state: Liquid

Color: Colorless

Odor: Irritant odor

Odor threshold: 0.047 ppm; 0.235~1.55 mg/m³

Melting point/Freezing point: -43°C

Boiling point or initial boiling point: 179°C

Boiling range data is not available.

Flammability (gases, liquids and solids): Ignitable

Lower and upper explosion limit/flammability limit:

Lower explosion limit: 1.1 vol %

Upper explosion limit: 14.0 vol %

Flash point: 67°C(Closed cup)

Auto-ignition temperature: 585°C

Decomposition temperature data is not available.

pH data is not available.

Kinematic viscosity data is not available.

Solubility:

Solubility in water: 525mg/L(25°C)

Solubility in solvent: Miscible with ethanol, diethyl ether, chloroform; slightly soluble in carbon tetrachloride.
n-Octanol/water partition coefficient: log Pow2.3

Vapor pressure: 120Pa (20°C)

Density and/or relative density: 1.098~1.104 g/ml (20°C)

Relative vapor density (Air=1): 4.4

Relative density of the Vapor/air - mixture at 20°C (Air = 1): 1.00

Particle characteristics data is not available.

Section 10. Stability and Reactivity**Reactivity**

Reactivity data is not available.

Chemical stability

Stable under normal storage/handling conditions.

Possibility of hazardous reactions

This product polymerizes under the influence of all common metals except nickel and lead.

This produces corrosive fumes. This generates fire or explosion hazard.

On combustion, forms toxic and corrosive fumes of hydrogen chloride.

Reacts vigorously with strong oxidants.

Attacks many metals in the presence of water.

Conditions to avoid

Contact with incompatible materials.

Open flames. Heating.

Incompatible materials

Acids, Strong oxidizing agents, Metals.

Hazardous decomposition products

Carbon oxides, Hydrogen chloride

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]

[NITE-CHRIP]

rat LD50: 440 – 1230 mg/kg (source: NITE)

Acute toxicity (Dermal)

[Product]

Based on available data, the classification criteria are not met.

[Data for components of the product]

[NITE-CHRIP]

guinea pig LDLo: 10 mL/kg (a converted value: 11000 mg/kg) (source: NITE)

Acute toxicity (Inhalation)

[Product]

Category 1, Fatal if inhaled

[Data for components of the product]

[NITE-CHRIP]

vapor: rat LC50: 0.74 mg/L (2-hour) (converted 4-hour equivalent value: 100 ppmV) (source: NITE)

Irritant properties

Skin corrosion/irritation

[Product]

Category 1, Causes severe skin burns and eye damage

[Data for components of the product]

[NITE-CHRIP]

Category 1 (source: NITE)

Serious eye damage/irritation

[Product]

Category 1, Causes serious eye damage

[Data for components of the product]

[NITE-CHRIP]

Category 1 (source: NITE)

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]

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

[Data for components of the product]

No data available.

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 1B, May cause cancer

[Data for components of the product]

[NITE-CHRIP]

Category 1B (source: NITE)

[IARC]

Group 2A : Probably carcinogenic to humans

[ACGIH]

A3: Confirmed Animal Carcinogen with Unknown Relevance to Humans

[EPA]

Group B2; Probable human carcinogen(1986)

[JSOH]

Group 2A: The agents which are probably or possibly carcinogenic to humans

[EU]

Category 1B; Substances presumed to have carcinogenic potential for 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 1, Causes damage to organs

[Data for components of the product]

[NITE-CHRIP]

Category 1 (nervous system, respiratory system) (source: NITE)

STOT-repeated exposure

[Product]

Category 1, Causes damage to organs through prolonged or repeated exposure

Category 2, May cause damage to organs through prolonged or repeated exposure

[Data for components of the product]

[NITE-CHRIP]

Category 1 (liver, nervous system, respiratory system), Category 2 (heart) (source: NITE)

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

Ecotoxicity

Aquatic toxicity

[Product]

Category 1, Very toxic to aquatic life

[Data for components of the product]

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

[NITE-CHRIP]

Crustacea (Marsupenaeus) 96-hour LC50: 140 μ g/L (source: NITE)

Water solubility

[Data for components of the product]

525mg/L(25°C) (source:PHYSPROP Database ; HSDB)

Persistence and degradability

[Data for components of the product]

Rapidly degradable (Degradation rate: 70.9% (by BOD)) (source: NITE)

Bioaccumulative potential

[Data for components of the product]

log Pow: 2.3 (source: NITE)

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 : 1738

UN Proper Shipping Name : BENZYL CHLORIDE

Class or division (Transport hazard class) : 6.1

Subsidiary hazard(s) : 8

Packing group : II

ERG GUIDE No.: 156

IMDG Code (International Maritime Dangerous Goods Regulations)

UN Number or ID Number : 1738

UN Proper Shipping Name : BENZYL CHLORIDE

Class or division (Transport hazard class) : 6.1

Subsidiary hazard(s) : 8

Packing group : II

IATA (Dangerous Goods Regulations)

UN Number or ID Number : 1738

UN Proper Shipping Name : BENZYL CHLORIDE

Class or division (Transport hazard class) : 6.1

Subsidiary hazard(s) : 8

Hazard labels : Toxic & Corrosive

Packing group : II

Environmental hazards

Marine pollutants (yes/no) : yes

Special precautions for user

Special precautions for user is not applicable.

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

Noxious Liquid Substances ; Cat. Y

Benzyl chloride

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

Carcinogenicity: cat.1, 1A, 1B

Benzyl chloride

Specific target organ toxicity – repeated exposure: cat.1

Benzyl chloride

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

Benzyl chloride

Section 15. Regulatory Information

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

Mutagenic Chemical Substances [MHLW_J Notice]

Benzyl chloride

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

Chemicals listed in TSCA Inventory

100-44-7

All components are listed or exempted.

Superfund Amendments and Reauthorizations Act (SARA), Title III

SARA 313 (TRI)

Benzyl 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

H330-Acute toxicity, Category 1: 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

H350-Carcinogenicity, Category 1B: H350 May cause cancer

H370-STOT – single exposure, Category 1: H370 Causes damage to organs

H372-STOT – Repeated exposure, Category 1: H372 Causes damage to organs through prolonged or repeated exposure

H373-STOT – Repeated exposure, Category 2: H373 May cause 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 23rd edit., 2023 UN

IMDG Code, 2024 Edition (Incorporating Amendment 42-24)

IATA Dangerous Goods Regulations (66th Edition) 2025

2024 EMERGENCY RESPONSE GUIDEBOOK (US DOT)

2025 TLVs and BEIs. (ACGIH)

JIS Z 7252 : 2019

JIS Z 7253 : 2019

2024 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 4.33 (<https://www.asahi-ghs.com/>)

NITE Chemical Risk Information Platform "NITE-CHRIP"

(https://www.chem-info.nite.go.jp/chem/chrip/chrip_search/systemTop)

GHS Classification Guidance for Enterprises 2019 Revised Edition (Ver. 2.1) (May. 2024, 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)

METI (Ministry of Economy, Trade and Industry in Japan)

MHLW (Ministry of Health, Labour and Welfare in Japan)

MOE (Ministry of the Environment in Japan)

JSOH (Japan Society for Occupational Health)

ISHA (Industrial Safety and Health Act in Japan)

CSCL (Chemical Substances Control Law in Japan)

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 Data published in Japan (National Institute of Technology and Evaluation (NITE) Chemical Risk Information Platform (NITE-CHRIP), up to FY2023).