MATERIAL SAFETY DATA SHEET

Benzyl Chloride

SECTION 1: Identification

1.1. GHS Product identifier

Physical state / Product form : Liquid

Trade name : Benzyl Chloride

1.2. Other means of identification

No additional information available.

1.3. Recommended use of the chemical and restrictions on use

Recommended use : Widely used in the synthesis of pharmaceuticals, agricultural chemicals, dyestuffs, and perfumes.

Restrictions on use : No information available.

1.4. Supplier's details

Cosmo Chemistry India Pvt. Ltd.

Office No. 713, 7th Floor, Millennium Business Hub, Sarthana Jakatnaka, Varachha Main Road, Surat, Gujarat – 395006, India

Email: info@cosmochemistryindia.com

1.5. Emergency phone number

Emergency number : +91 7984584838

SECTION 2: Hazard identification

2.1. Classification of the substance or mixture

Classification according to the United Nations GHS:

Hazard Class	Category	H-Statement
Flammable liquids	Category 4	H227
Acute toxicity (oral)	Category 4	H302
Acute toxicity (inhalation)	Category 3	H331
Skin corrosion/irritation	Category 2	H315
Serious eye damage/eye irritation	Category 1	H318
Carcinogenicity	Category 1B	H350
STOT – Single exposure (Respiratory tract irritation)	Category 3	H335
STOT – Repeated exposure	Category 2	H373
Hazardous to the aquatic environment – Acute Hazard	Category 2	H401

Adverse physicochemical, human health and environmental effects: Combustible liquid. Harmful if swallowed. Causes skin irritation. Causes serious eye damage. Toxic if inhaled. May cause respiratory irritation. May cause cancer. May cause damage to organs through prolonged or repeated exposure. Toxic to aquatic life.

2.2. GHS Label elements, including precautionary statements

Signal word (GHS UN) : Danger

Hazard statements (GHS UN):

H227 – Combustible liquid.
H302 – Harmful if swallowed.
H315 – Causes skin irritation.
H318 – Causes serious eye damage.
H331 – Toxic if inhaled.
H335 – May cause respiratory irritation.
H350 – May cause cancer.
H373 – May cause damage to organs through prolonged or repeated exposure.
H401 – Toxic to aquatic life.

Precautionary statements (GHS UN): P201, P202, P210, P260, P261, P264, P270, P271, P273, P280, P301+P312, P302+P352, P304+P340, P305+P351+P338, P308+P313, P310, P330, P332+P313, P362+P364, P370+P378, P403, P403+P233, P405, P501.

2.3. Other hazards which do not result in classification

No information available.

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable.

3.2. Mixtures

Name	CAS No.	%
Benzyl chloride	100-44-7	≥ 99.5
α,α-Dichlorotoluene	98-87-3	≤ 0.25
o-Chlorotoluene	95-49-8	≤ 0.072
Toluene	108-88-3	≤ 0.05
p-Chlorotoluene	106-43-4	≤ 0.048

SECTION 4: First-aid measures

4.1. Description of necessary first-aid measures

General: Get medical advice/attention if exposed or concerned. Call a poison center or a doctor if you feel unwell.

Inhalation: Remove person to fresh air and keep comfortable for breathing. Call a doctor.

Skin contact: Wash skin with plenty of water. Take off contaminated clothing. Get medical advice/attention if irritation occurs.

Eye contact: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician immediately.

Ingestion: Rinse mouth. Call a poison center or a doctor if you feel unwell. Never give anything by mouth to an unconscious person.

4.2. Most important symptoms/effects, acute and delayed

Harmful if swallowed. Causes skin irritation. Causes serious eye damage. Toxic if inhaled. May cause respiratory irritation. May cause cancer. May cause damage to organs through prolonged or repeated exposure.

4.3. Indication of immediate medical attention and special treatment needed, if necessary

Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1. Suitable extinguishing media

Suitable: Water spray. Dry powder. Foam. Carbon dioxide.

Unsuitable: Do not use a solid water stream as it may scatter and spread fire.

5.2. Specific hazards arising from the chemical

Fire hazard: Combustible liquid.

Hazardous decomposition products: Thermal decomposition can lead to release of irritating gases and vapours. Toxic fumes may be released.

5.3. Special protective actions for fire-fighters

Eliminate all ignition sources if safe to do so. Wear personal protective equipment. Ensure adequate ventilation. Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus and complete protective clothing required.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Eliminate every possible source of ignition. Ensure adequate ventilation, especially in confined areas. Avoid contact with skin, eyes and clothing. No open flames, no sparks, and no smoking. Only qualified personnel equipped with suitable protective equipment may intervene. Do not breathe dust/fume/gas/mist/vapours/spray.

For emergency responders: Do not attempt to take action without suitable protective equipment. Evacuate unnecessary personnel. Remove all sources of ignition.

6.2. Environmental precautions

Avoid release to the environment. Notify authorities if product enters sewers or public waters.

6.3. Methods and materials for containment and cleaning up

Collect spillage. Take up liquid spill into absorbent material. Notify authorities if product enters sewers or public waters. Dispose of materials or solid residues at an authorized site.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Ensure good ventilation of the work station. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Wear personal protective equipment. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Take all necessary technical measures to avoid or minimize release of the product on the workplace. Limit quantities of product at the minimum necessary for handling and limit the number of exposed workers. Provide local exhaust or general room ventilation. Floors, walls and other surfaces in the hazard area must be cleaned regularly. Do not breathe dust/fume/gas/mist/vapours/spray. Avoid contact with skin and eyes.

Hygiene measures: Separate working clothes from town clothes. Launder separately. Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Store in a dry, cool and well-ventilated place. Store locked up. Keep container tightly closed.

Incompatible materials: Strong acids. Strong bases. Strong oxidizing agents.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Substance	Reference	Value
Benzyl chloride (100-44-7)	ACGIH OEL TWA	1 ppm
o-Chlorotoluene (95-49-8)	ACGIH OEL TWA	50 ppm
Toluene (108-88-3)	EU IOEL TWA	192 mg/m³ / 50 ppm
Toluene (108-88-3)	EU IOEL STEL	384 mg/m³ / 100 ppm
Toluene (108-88-3)	India PEL (OEL TWA)	375 mg/m³ / 100 ppm
Toluene (108-88-3)	India PEL (OEL STEL)	560 mg/m³ / 150 ppm
Toluene (108-88-3)	ACGIH OEL TWA	20 ppm
Toluene (108-88-3)	ACGIH BEI (blood, pre-shift)	0.02 mg/l
Toluene (108-88-3)	ACGIH BEI (urine, end of shift)	0.03 mg/l

8.2. Appropriate engineering controls

Ensure good ventilation of the work station. Avoid release to the environment.

8.3. Individual protection measures, such as personal protective equipment (PPE)

Hand protection: Protective gloves

Eye protection: Safety glasses

Skin and body protection: Wear suitable protective clothing

Respiratory protection: In case of inadequate ventilation wear respiratory protection.

8.4. Exposure limit values for the other components

No additional information available.

SECTION 9: Physical and chemical properties

9.1. Basic physical and chemical properties

Parameter	Value
Physical state	Liquid
Appearance	Colorless liquid
Colour	Colorless transparent
Odour	Slight aromatic
Odour threshold	Not available
Melting point	Not available
Freezing point	Not available
Boiling point	179.4 °C
Flammability	Not applicable
Lower explosion limit	Not available
Upper explosion limit	Not available
Flash point	67 °C (closed cup)
Auto-ignition temperature	Not available
Decomposition temperature	Not available
pH	Not available
Viscosity, kinematic (40 °C)	Not available
Partition coefficient n-octanol/water (Log Pow)	Not available
Vapour pressure	2.93 kPa @ 78 °C
Density	1.10 g/cm³

Relative density	Not available
Solubility	Not available
Particle size	Not applicable

9.2. Data relevant with regard to physical hazard classes (supplemental)

Explosive properties: Not explosive

Oxidising properties: Non oxidizing

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

Avoid contact with hot surfaces. Heat. No flames, no sparks. Eliminate all sources of ignition.

10.5. Incompatible materials

Strong acids. Strong bases. Strong oxidizing agents.

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral): Harmful if swallowed.

Acute toxicity (dermal): Not classified

Acute toxicity (inhalation): Toxic if inhaled.

Substance	Test	Value
Benzyl chloride (100-44-7)	LD50 oral rat	625 mg/kg
Benzyl chloride (100-44-7)	LC50 Inhalation – Rat (2h)	0.74 mg/l
α,α-Dichlorotoluene (98-87-3)	LD50 oral rat	2250 mg/kg
α,α-Dichlorotoluene (98-87-3)	LC50 Inhalation – Rat (2h)	61 ppm
p-Chlorotoluene (106-43-4)	LD50 oral rat	1920 mg/kg
p-Chlorotoluene (106-43-4)	LD50 dermal rabbit	> 2000 mg/kg
o-Chlorotoluene (95-49-8)	LD50 oral rat	3227 mg/kg
o-Chlorotoluene (95-49-8)	LD50 dermal rabbit	> 2165 mg/kg
o-Chlorotoluene (95-49-8)	LC50 Inhalation – Rat	7119 ppm/4h
Toluene (108-88-3)	LD50 oral rat	2600 mg/kg
Toluene (108-88-3)	LD50 dermal rabbit	12000 mg/kg
Toluene (108-88-3)	LC50 Inhalation – Rat (vapours)	> 20 mg/l

Skin corrosion/irritation: Causes skin irritation.

Serious eye damage/irritation: Causes serious eye damage.

Respiratory or skin sensitisation: Not classified

Germ cell mutagenicity: Not classified

Carcinogenicity: May cause cancer.

Reproductive toxicity: Not classified

STOT – single exposure: May cause respiratory irritation.

STOT – repeated exposure: May cause damage to organs through prolonged or repeated exposure.

Aspiration hazard: Not classified

SECTION 12: Ecological information

12.1. Toxicity

Ecology – general: Toxic to aquatic life.

Hazardous to the aquatic environment, short-term (acute): Toxic to aquatic life.

Hazardous to the aquatic environment, long-term (chronic): Not classified

Substance	Test	Value
p-Chlorotoluene (106-43-4)	LC50 – Fish (96h)	24 mg/l
p-Chlorotoluene (106-43-4)	EC50 – Crustacea (48h)	3.57 mg/l
o-Chlorotoluene (95-49-8)	LC50 – Fish (96h)	70–100 mg/l
Toluene (108-88-3)	LC50 – Fish (96h, flow-through)	15.22–19.05 mg/l
Toluene (108-88-3)	LC50 – Fish (96h, static)	12.6 mg/l
Toluene (108-88-3)	EC50 – Crustacea (48h, static)	5.46–9.83 mg/l
Toluene (108-88-3)	EC50 – Crustacea (48h)	11.5 mg/l
Toluene (108-88-3)	EC50 72h – Algae	12.5 mg/l
Toluene (108-88-3)	EC50 96h – Algae	> 433 mg/l
Toluene (108-88-3)	NOEC chronic fish (40d)	1.39 mg/l

12.2. Persistence and degradability

No additional information available.

12.3. Bioaccumulative potential

Toluene: BCF – Fish 90; Log Pow 2.73 (20 °C, pH 7); Low bioaccumulation potential.

p-Chlorotoluene: BCF – Fish 14–101.6; Log Pow 3.33.

o-Chlorotoluene: BCF – Fish 20–112; Log Pow 3.42.

12.4. Mobility in soil

No additional information available.

12.5. Other adverse effects

No additional information available.

SECTION 13: Disposal considerations

13.1. Disposal methods

Dispose of contents/container in accordance with licensed collector's sorting instructions. Refer to manufacturer/supplier for information on recovery/recycling. Dispose in a safe manner in accordance with local/national regulations.

SECTION 14: Transport information

In accordance with UN RTDG / IMDG / IATA

Parameter	UN RTDG / IMDG / IATA
UN number	1738
UN Proper Shipping Name	BENZYL CHLORIDE
Transport hazard class(es)	6.1 (8)
Packing group	II
Environmental hazards	Dangerous for the environment: No; Marine pollutant: No
ERG code (IATA)	6C

Properties and observations (IMDG): Colourless liquid with a pungent odour. Causes tears. Immiscible with water, but hydrolyses slowly in contact with it. In the presence of moisture, corrosive to most metals. Toxic if swallowed, by skin contact or by vapour inhalation. Causes burns to skin, eyes and mucous membranes.

14.7. Transport in bulk according to IMO instruments

Not applicable.

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations specific for the product in question

Benzyl chloride and related components are listed on major global chemical inventories including TSCA (USA), EINECS (EU), AICIS (Australia), PICCS (Philippines), ENCS/ISHL (Japan), KECL (Korea), IECSC (China), NZIoC (New Zealand), INSQ (Mexico), and DSL/NDSL (Canada). Benzyl chloride and certain related substances are also regulated under Japan's Poisonous and Deleterious Substances Control Law and PRTR Law.

SECTION 16: Other information

Data sources: LOLI, ECHA reference.

Training advice: Normal use of this product shall imply use in accordance with the instructions on the packaging.

Full text of H-statements referenced in Section 2:

H227 – Combustible liquid
H302 – Harmful if swallowed
H315 – Causes skin irritation
H318 – Causes serious eye damage
H331 – Toxic if inhaled
H335 – May cause respiratory irritation
H350 – May cause cancer
H373 – May cause damage to organs through prolonged or repeated exposure
H401 – Toxic to aquatic life

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

This is a computer generated document. No stamp or signature is required.