

SAFETY DATA SHEET

Version 5.6
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1. PRODUCT AND COMPANY IDENTIFICATION

Product name	: Benzyl chloride	
Product Number	: 185558	
Brand	: Aldrich	
Product Use	: For laboratory research purposes.	
Supplier	: Sigma-Aldrich Canada Co. 2149 Winston Park Drive OAKVILLE ON L6H 6J8 CANADA	Manufacturer : Sigma-Aldrich Corporation 3050 Spruce St. St. Louis, Missouri 63103 USA
Telephone	: +1 9058299500	
Fax	: +1 9058299292	
Emergency Phone # (For both supplier and manufacturer)	: 1-800-424-9300	
Preparation Information	: Sigma-Aldrich Corporation Product Safety - Americas Region 1-800-521-8956	

2. HAZARDS IDENTIFICATION

Emergency Overview

Target Organs

Kidney, Liver, Blood, Central nervous system

Other hazards which do not result in classification

Lachrymator.

WHMIS Classification

B3	Combustible Liquid	Combustible Liquid
D1A	Very Toxic Material Causing Immediate and Serious Toxic Effects	Highly toxic by inhalation
D1B	Toxic Material Causing Immediate and Serious Toxic Effects	Toxic by ingestion
D2A	Very Toxic Material Causing Other Toxic Effects	Toxic by skin absorption
D2B	Toxic Material Causing Other Toxic Effects	Chronic toxicity
E	Corrosive Material	Carcinogen
		Moderate respiratory irritant
		Severe eye irritant
		Mutagen
		Corrosive to skin

GHS Classification

Flammable liquids (Category 3)
Acute toxicity, Inhalation (Category 2)
Acute toxicity, Oral (Category 4)
Skin irritation (Category 2)
Serious eye damage (Category 1)
Germ cell mutagenicity (Category 1B)
Carcinogenicity (Category 1B)
Specific target organ toxicity - single exposure (Category 3)
Specific target organ toxicity - single exposure (Category 2)

Acute aquatic toxicity (Category 2)

GHS Label elements, including precautionary statements

Pictogram



Signal word

Danger

Hazard statement(s)

H226 Flammable liquid and vapour.
H302 Harmful if swallowed.
H315 Causes skin irritation.
H318 Causes serious eye damage.
H330 Fatal if inhaled.
H335 May cause respiratory irritation.
H340 May cause genetic defects.
H350 May cause cancer.
H371 May cause damage to organs.
H401 Toxic to aquatic life.

Precautionary statement(s)

P201 Obtain special instructions before use.
P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P280 Wear protective gloves/ eye protection/ face protection.
P284 Wear respiratory protection.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a POISON CENTER or doctor/ physician.

HMIS Classification

Health hazard: 4
Chronic Health Hazard: *
Flammability: 2
Physical hazards: 0

Potential Health Effects

Inhalation May be fatal if inhaled. Causes respiratory tract irritation.
Skin Toxic if absorbed through skin. Causes skin irritation.
Ingestion Toxic if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms : α -Chlorotoluene

Formula : C_7H_7Cl

CAS-No.	EC-No.	Index-No.	Concentration
Benzyl chloride			
100-44-7	202-853-6	602-037-00-3	<=100%
Methyloxirane			
75-56-9	200-879-2	603-055-00-4	<= 1 %

4. FIRST AID MEASURES

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIREFIGHTING MEASURES**Conditions of flammability**

Flammable in the presence of a source of ignition when the temperature is above the flash point. Keep away from heat/sparks/open flame/hot surface. No smoking.

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

Hazardous combustion products

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Hydrogen chloride gas

Explosion data - sensitivity to mechanical impact

No data available

Explosion data - sensitivity to static discharge

No data available

Further information

Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES**Personal precautions**

Wear respiratory protection. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Methods and materials for containment and cleaning up

Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

7. HANDLING AND STORAGE**Precautions for safe handling**

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

Conditions for safe storage

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Light sensitive. Moisture sensitive.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Components with workplace control parameters**

Components	CAS-No.	Value	Control parameters	Basis
Benzyl chloride	100-44-7	TWA	1.000000 ppm 5.200000 mg/m3	Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)
Remarks	Occupational exposure limit is based on irritation effects and its adjustment to compensate for			

		unusual work schedules is not required		
		C	1.000000 ppm	Canada. British Columbia OEL
	IARC '2A' applies to substances deemed probably carcinogenic to humans on the basis of limited evidence of carcinogenicity in humans.			
		TWAEV	1.000000 ppm 5.200000 mg/m3	Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants
		TWA	1.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)
Methyloxirane	75-56-9	TWA	2.000000 ppm 4.700000 mg/m3	Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)
		TWA	2.000000 ppm	Canada. British Columbia OEL
Remarks	IARC '2B' applies to substances deemed possibly carcinogenic to humans. Sensitizer: sensitization critical effect			
		TWAEV	20.000000 ppm 48.000000 mg/m3	Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants
	A substance which may not be recirculated in accordance with section 108 A substance to which exposure must be reduced to a minimum in accordance with section 42 Carcinogenic effect suspected in humans			
		TWA	2.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)
		TWA	2 ppm	USA. ACGIH Threshold Limit Values (TLV)

Personal protective equipment

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact

Material: Fluorinated rubber

Minimum layer thickness: 0.7 mm

Break through time: 480 min

Material tested: Vitoject® (KCL 890 / Aldrich Z677698, Size M)

Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0.4 mm

Break through time: 30 min

Material tested: Camatril® (KCL 730 / Aldrich Z677442, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Eye protection

Tightly fitting safety goggles. Faceshield (8-inch minimum). Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection

Complete suit protecting against chemicals, Flame retardant antistatic protective clothing., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene measures

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

Specific engineering controls

Use mechanical exhaust or laboratory fumehood to avoid exposure.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	liquid
Colour	colourless

Safety data

pH	No data available
Melting point/freezing point	Melting point/range: -43 °C (-45 °F) - lit.
Boiling point	177 - 181 °C (351 - 358 °F) - lit.
Flash point	67 °C (153 °F)
Ignition temperature	585 °C (1,085 °F)
Auto-ignition temperature	585 °C (1,085 °F) at 1,030 hPa (773 mmHg)
Lower explosion limit	1.1 %(V)
Upper explosion limit	14 %(V)
Vapour pressure	1.60 hPa (1.20 mmHg) at 25 °C (77 °F)
Density	1.1 g/cm ³ at 25 °C (77 °F)
Water solubility	0.46 g/l at 30 °C (86 °F) - Decomposes in contact with water.
Partition coefficient: n-octanol/water	log Pow: 2.3
Relative vapour density	4.37 - (Air = 1.0)
Odour	pungent
Odour Threshold	No data available
Evaporation rate	No data available

10. STABILITY AND REACTIVITY

Chemical stability

Stable under recommended storage conditions.

Possibility of hazardous reactions

No data available

Conditions to avoid

Heat, flames and sparks.

Materials to avoid

Contact with common metals (except nickel and lead) or moisture produces a Friedel-Crafts, condensation-type reaction with the liberation of heat and formation of toxic and corrosive hydrogen chloride. Hydrolyzes very slowly to form hydrogen chloride and benzyl alcohol. This product is not sensitive to physical impact. When stabilized with propylene oxide, the possibility of a Friedel-Crafts type reaction is minimized. Depletion of the stabilizer increases the possibility of condensation reactions, Oxidizing agents, Iron and iron salts., Brass, Aluminum

Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Hydrogen chloride gas

Other decomposition products - No data available

Contains the following stabiliser(s):

Methyloxirane (<=1 %)

11. TOXICOLOGICAL INFORMATION**Acute toxicity****Oral LD50**

LD50 Oral - Rat - male and female - 560 mg/kg

Inhalation LC50

LC50 Inhalation - Mouse - 4 h - 0.27 mg/l

Dermal LD50

No data available

Other information on acute toxicity

No data available

Skin corrosion/irritation

Skin - Rabbit - Irritating to skin. - 4 h - OECD Test Guideline 404

Serious eye damage/eye irritation

No data available

Respiratory or skin sensitisation

Mouse - May cause sensitisation by skin contact. - OECD Test Guideline 429

Germ cell mutagenicity

Genotoxicity in vitro - S. typhimurium - with and without metabolic activation - This material has shown a positive Ames test, an in vitro test that indicates a possible potential to produce a carcinogenic effect.

Genotoxicity in vivo - Mouse - Intraperitoneal - negative

Carcinogenicity

This product is or contains a component that has been reported to be probably carcinogenic based on its IARC, OSHA, ACGIH, NTP, or EPA classification.

Possible human carcinogen

IARC: 2A - Group 2A: Probably carcinogenic to humans (Benzyl chloride)

IARC: 2B - Group 2B: Possibly carcinogenic to humans (Methyloxirane)

Reproductive toxicity

No data available

Teratogenicity

No data available

Specific target organ toxicity - single exposure (Globally Harmonized System)

No data available

Specific target organ toxicity - repeated exposure (Globally Harmonized System)

No data available

Aspiration hazard

No data available

Potential health effects

Inhalation	May be fatal if inhaled. Causes respiratory tract irritation.
Ingestion	Toxic if swallowed.
Skin	Toxic if absorbed through skin. Causes skin irritation.

Signs and Symptoms of Exposure

burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Headache, Nausea, Vomiting, To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Synergistic effects

No data available

Additional Information

RTECS: XS8925000

12. ECOLOGICAL INFORMATION

Toxicity

Toxicity to fish	LC50 - Danio rerio (zebra fish) - 4 mg/l - 96 h Method: OECD Test Guideline 203
Toxicity to daphnia and other aquatic invertebrates	Immobilization EC50 - Daphnia magna (Water flea) - 6.1 mg/l - 48 h Method: OECD Test Guideline 202
Toxicity to algae	Growth inhibition EC50 - Pseudokirchneriella subcapitata (algae) - 19.3 mg/l - 72 h Method: OECD Test Guideline 201

Persistence and degradability

Biodegradability	aerobic Result: 71 % - Readily biodegradable Method: OECD Test Guideline 301C
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Bioaccumulative potential

No data available

Mobility in soil

No data available

PBT and vPvB assessment

No data available

Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Toxic to aquatic life.

No data available

13. DISPOSAL CONSIDERATIONS

Aldrich - 185558

Product

Contact a licensed professional waste disposal service to dispose of this material. Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION**DOT (US)**

UN number: 1738 Class: 6.1 (8) Packing group: II
Proper shipping name: Benzyl chloride
Reportable Quantity (RQ): 100 lbs
Marine pollutant: No
Poison Inhalation Hazard: No

IMDG

UN number: 1738 Class: 6.1 (8) Packing group: II EMS-No: F-A, S-B
Proper shipping name: BENZYL CHLORIDE
Marine pollutant: No

IATA

UN number: 1738 Class: 6.1 (8) Packing group: II
Proper shipping name: Benzyl chloride

15. REGULATORY INFORMATION**WHMIS Classification**

B3	Combustible Liquid	Combustible Liquid
D1A	Very Toxic Material Causing Immediate and Serious Toxic Effects	Highly toxic by inhalation
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E	Corrosive Material	Carcinogen
		Moderate respiratory irritant
		Severe eye irritant
		Mutagen
		Corrosive to skin

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

16. OTHER INFORMATION**Text of H-code(s) and R-phrases mentioned in Section 3**

STOT RE Działanie toksyczne na narządy docelowe - powtarzane narażenie
STOT SE Działanie toksyczne na narządy docelowe - narażenie jednorazowe

Further information

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