

Paushak Limited

Safety Data Sheet

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product name	:	Benzyl Chloroformate
CAS No.	:	501-53-1
Company	:	Paushak Limited At: Panelav, PO:Tajpura, Taluka: Halol District: Panchmahals - 389350 Gujarat, INDIA.
Telephone	:	+91 2676 664403 / 664412
Emergency Phone #	:	+91 9909985374

2. HAZARDS IDENTIFICATION

Classification of the substance or mixture:

Flammable liquids (Category 4)
Corrosive to metals (Category 1)
Acute toxicity (Oral) (Category 5)
Acute toxicity (Inhalation) (Category 2)
Skin corrosion/irritation (Category 1B)
Serious eye damage/eye irritation (Category 1)
Acute aquatic hazard (Category 1)
Long-term aquatic hazard (Category 1)
Danger!

Signal word:

Hazard Statement(s):

H227: Combustible liquid.
H290: May be corrosive to metals.
H314: Causes severe skin burns and eye damage.
H330: Fatal if inhaled.
H410: Very toxic to aquatic life with long lasting effects.

Pictogram(s) or Symbol(s):



Precautionary Statement(s):

P210: Keep away from flames and hot surfaces. – No smoking.
P234: Keep only in original container.
P260: Do not breathe mist, vapors or spray.
P264: Wash hands and face thoroughly after handling.
P271: Use only outdoors or in a well-ventilated area.
P273: Avoid release to the environment.
P280: Wear protective gloves, protective clothing, face protection.
P284: Wear respiratory protection.
P301+P330+P331+P310: If swallowed; Rinse mouth. Do NOT induce vomiting. Immediately call a poison center or doctor.
P303+P361+P353+P310+P363: If on skin (or hair); Take off immediately all contaminated clothing. Rinse skin with water or shower. Immediately call a poison center or doctor. Wash contaminated clothing before reuse.
P304+P340+P310: If inhaled; Remove person to fresh air and keep comfortable for breathing. Immediately call a poison center or doctor.
P305+P351+P338+P310: 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 or doctor.
P370+P378: In case of fire: Use dry chemical, dry sand or foam to extinguish.
P390: Absorb spillage to prevent material damage.

Hazards not otherwise classified:		P391: Collect spillage. P403+P233: Store in a well-ventilated place. Keep container tightly closed. P405: Store locked up. P406: Store in corrosive resistant bottle or metal container with a resistant inner liner. P501: Dispose of contents and container in accordance with local, regional, national regulations (e.g. US: 40 CFR Part 261, EU: 91/156/EEC, JP: Waste Disposal and Cleaning Act, etc.). May be harmful if swallowed. Lachrymator.
3. COMPOSITION/INFORMATION ON INGREDIENTS		
Substance/Mixture:	Substance	
Components:	Benzyl Chloroformate	
Percent:	>96.0%(T)	
CAS Number:	501-53-1	
EC Number:	207-925-0	
Molecular Weight:	170.59	
Chemical Formula:	C ₈ H ₇ ClO ₂	
Synonyms:	Chloroformic Acid Benzyl Ester , Carbobenzoxy Chloride , Cbz Chloride , Cbz-Cl , Z-Cl	
CA Index:	No data available	
4. FIRST AID MEASURES		
Inhalation:	Immediately call a poison center or doctor. Effects of exposure (inhalation) to substance may be delayed. Move victim to fresh air. Give artificial respiration if victim is not breathing. Administer oxygen if breathing is difficult. Keep victim warm and quiet. Treat symptomatically and supportively. Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.	
Skin contact:	For severe burns, immediate medical attention is required. Immediately call a poison center or doctor. Remove and wash contaminated clothing before re-use. In case of contact with substance, immediately flush skin with running water for at least 20 minutes. Treat symptomatically and supportively. Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.	
Eye contact:	IMMEDIATELY flush eyes with running water for at least 15 minutes, keeping eyelids open. Eye contact with vapors or substance may cause severe injury, burns, or death. Call emergency medical service. Move victim to fresh air. Check for and remove any contact lenses. Keep victim warm and quiet. Treat symptomatically and supportively. Effects of exposure to substance may be delayed. Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.	
Ingestion:	Do not induce vomiting without medical advice. Call a physician or Poison Control Center immediately. Does not use mouth-to-mouth method if victim ingested the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Loosen tight clothing such as a collar, tie, belt or waistband. If a person vomits place them in the recovery position so that vomit will not re enter the mouth and throat. Rinse mouth. Keep victim warm and quiet. Treat symptomatically and supportively. Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.	
Symptoms/effects		
Acute:	Pain. Redness.	
Delayed:	No data available	

Immediate medical attention:	<p>WARNING: It might be dangerous to the person providing aid to give mouth-to-mouth respiration, because the inhaled material is toxic.</p> <p>WARNING: It might be hazardous to the person providing aid to give mouth – to – mouth respiration, because the inhaled material is corrosive. For severe burns, immediate medical attention is required. If breathing has stopped, perform artificial respiration. Use first aid treatment according to the nature of the injury. Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.</p>
5. FIRE-FIGHTING MEASURES	
Suitable extinguishing media:	Dry chemical, CO2 or water spray. Consult with local fire authorities before attempting large scale fire fighting operations.
Unsuitable extinguishing media for safety reasons:	Water
Specific hazards arising from the chemical	
Hazardous combustion products:	These products include: Carbon oxides Halogenated compounds
Other specific hazards:	WARNING: Highly toxic HCl gas is produced during combustion.
Special precautions for fire-fighters:	Use water spray or fog; do not use straight streams. Dike fire-control water for later disposal; do not scatter the material. CAUTION: All these products have a very low flash point: Use of water spray when fighting fire may be inefficient. Do not use straight streams. Runoff to sewer may create fire or explosion hazard. Containers may explode when heated. Move containers from fire area if you can do it without risk.
Special protective equipment for fire-fighters:	Wear positive pressure self-contained breathing apparatus (SCBA). Structural fire fighters' protective clothing provides limited protection in fire situations ONLY; it may not be effective in spill situations. Wear chemical protective clothing which is specifically recommended by the manufacturer. It may provide little or no thermal protection.
6. ACCIDENTAL RELEASE MEASURES	
Personal precautions:	Avoid contact with skin, eyes, and clothing. Keep people away from and upwind of spill/leak. Use spark proof tools and explosion-proof equipment. Remove all sources of ignition. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing (Section 8). Warn unnecessary personnel to move away. Stop leak if you can do it without risk. Ensure adequate ventilation. Isolate the hazard area and deny entry to unnecessary and unprotected personnel.
Personal protective equipment:	Wear eye protection (splash goggles) and face protection (full length face shield). Lab coat. Vapor respirator. Be sure to use a approved respirator or equivalent. Wear protective gloves (nitrile).
Emergency procedures:	Isolate area until gas has dispersed. In case of a spill and/or a leak, always shut off any sources of ignition, ventilate the area, and exercise caution. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Warn personnel to move away. Prevent entry into sewers, basements or confined areas; dike if needed.
Methods and materials for containment and cleaning up:	ELIMINATE all ignition sources (no smoking, flares, sparks, or flames in immediate area). All equipment used when handling the product must be grounded. Stop leak if without risk. Ventilate the area. Absorb with an inert material and put the spilled material in an appropriate waste disposal container. Use clean non-sparking tools to collect absorbed material. Dike far ahead of spill; use dry sand to contain the flow of material.
Environmental precautions:	Keep away from living quarters. Environmental hazard. Do not let product enter drains. Prevent further leakage or spillage if safe to do so. Water runoff can cause environmental damage. Prevent entry into sewers, basements or confined areas; dike if needed.
7. HANDLING AND STORAGE	
Precautions for safe handling:	Do NOT breath gas, fumes, vapor, or spray. Manipulate under an adequate fume hood. Avoid contact with skin and eyes. Keep away from heat and sources of ignition. Use explosion-proof equipment. Use only non-sparking hand tool when handling this product. Ground all

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<p>Conditions for safe storage:</p> <p>Storage incompatibilities:</p>	<p>equipment containing material. Take measures to prevent build up of electrostatic charge. May corrode metallic surfaces. Good general ventilation should be sufficient to control airborne levels. Keep container dry. Handle and open container with care. Wear suitable protective clothing, gloves and eye/face protection. When using do not eat, drink, or smoke. Keep away from sources of ignition.</p> <p>Store locked up. Keep containers tightly closed in a cool, well-ventilated place. Keep away from sources of ignition. Store and use away from heat, sparks, open flame, or any other ignition source. Store in corrosive resistant container with a resistant inner liner. Keep away from incompatibles. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Avoid prolonged storage periods. Moisture sensitive. Store in 2 to 8 °C.</p> <p>Bases, Store away from oxidizing agents</p>
8. EXPOSURE CONTROLS/PERSONAL PROTECTION	
<p>Exposure limits:</p> <p>Appropriate engineering controls:</p> <p>Good general ventilation should be sufficient to control airborne levels. Ventilation is normally required when handling or using this product. Eyewash fountains should be provided in areas where there is any possibility that workers could be exposed to the substance. Follow safe industrial engineering/laboratory practices when handling any chemical.</p> <p>Personal protective equipment</p> <p>Respiratory protection:</p> <p>Hand protection:</p> <p>Eye protection:</p> <p>Skin and body protection:</p>	<p>No data available</p> <p>Vapor respirator. Be sure to use a approved respirator or equivalent.</p> <p>Wear protective gloves.</p> <p>Splash goggles.</p> <p>Lab coat.</p>
9. PHYSICAL AND CHEMICAL PROPERTIES	
<p>Physical state (20°C):</p> <p>Form:</p> <p>Color:</p> <p>Odor:</p> <p>Odor threshold:</p> <p>Melting point/freezing point:</p> <p>Boiling point/range:</p> <p>Decomposition temperature:</p> <p>Density:</p> <p>Relative density:</p> <p>Partition coefficient: n-octanol/water (log Pow)</p> <p>Flash point:</p> <p>Flammability (solid, gas):</p> <p>pH:</p> <p>Vapor pressure:</p> <p>Vapor density:</p> <p>Dynamic Viscosity:</p> <p>Evaporation rate: (Butyl Acetate = 1)</p> <p>Autoignition temperature:</p> <p>Flammability or explosive limits:</p> <p>Lower:</p> <p>Upper:</p> <p>Solubility(ies):</p>	<p>Liquid</p> <p>Clear</p> <p>Colorless - Slightly pale yellow</p> <p>Pungent</p> <p>No data available</p> <p>0°C (32°F)</p> <p>178 - 180 °C</p> <p>No data available</p> <p>No data available</p> <p>1.2</p> <p>1.84</p> <p>92°C (197.6°F)</p> <p>Not flammable</p> <p>No data available</p> <p>9Pa/87°C</p> <p>1.0</p> <p>No data available</p> <p>No data available</p> <p>590°C (1094°F)</p> <p>No data available</p> <p>No data available</p> <p>Water: Very slightly soluble.</p>

Viscosity, kinematic:		Soluble: Ether, Benzene, Acetone, Chloroform, Toluene No data available
10. STABILITY AND REACTIVITY		
Reactivity:		Corrodes in contact with metals.
Chemical Stability:		Heat sensitive. Moisture sensitive.
Possibility of Hazardous Reactions:		In use, may form flammable/explosive vapor-air mixture.
Conditions to avoid:		Exposure to moisture. Heat sensitive. Moisture sensitive.
Incompatible materials:		Oxidizing agents
Hazardous Decomposition Products:		No data available
11. TOXICOLOGICAL INFORMATION		
Acute Toxicity:		ihl-rat LC50:590 mg/m ³ /4H orl-rat LD50:3 g/kg
Skin corrosion/irritation:		No data available
Serious eye damage/irritation:		No data available
Chronic Toxicity/Effects:		No data available
Respiratory or skin sensitization:		No data available
Germ cell mutagenicity:		No data available
Carcinogenicity:		No data available
Reproductive toxicity:		No data available
IARC:		No data available
NTP:		No data available
OSHA:		No data available
Routes of Exposure:		Inhalation, Eye contact, Ingestion, Skin contact.
Symptoms related to exposure:		Overexposure may result in serious illness or death. Skin contact may produce burns. Skin contact may result in inflammation; characterized by itching, scaling, reddening, or occasionally blistering. Eye contact can result in corneal damage or blindness. Inflammation of the eye is characterized by redness, watering, and itching.
Potential Health Effects:		May be harmful if inhaled or ingested. Overexposure may result in serious illness or death.
Target organ(s):		No data available
12. ECOLOGICAL INFORMATION		
Ecotoxicity		
Fish:		No data available
Aquatic invertebrates:		No data available
Aquatic plants:		No data available
Chronic toxicity to fish:		No data available
Chronic toxicity to aquatic invertebrates:		No data available
Crustacea:		No data available
Algae:		No data available
Persistence and degradability:		No data available
Bioaccumulative potential (BCF):		No data available
Mobility in soil:		No data available
Partition coefficient: n-octanol/water (log Pow)		1.84
Henry's Law: constant (PaM³/mol)		19.2

13. DISPOSAL CONSIDERATIONS				
Disposal of product:		Recycle to process if possible. It is the generator's responsibility to comply with Federal, State and Local rules and regulations. You may be able to dissolve or mix material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber system. This section is intended to provide assistance but does not replace these laws, nor does compliance in accordance with this section ensure regulatory compliance according to the law. local guidelines for Identification and Listing of Hazardous Waste are listed in rules. The product should not be allowed to enter the environment, drains, water ways, or the soil.		
Disposal of container:				
Other considerations:				
Observe all federal, state and local regulations when disposing of the substance.				
14. TRANSPORT INFORMATION				
DOT (US)				
UN number: UN1739	Proper Shipping Name: Benzyl Chloroformate	Class or Division: 8	Subrisk(s): --	Packing Group: I
IATA				
UN number: UN1739	Proper Shipping Name: Benzyl Chloroformate	Class or Division: 8	Subrisk(s): --	Packing Group: I
IMDG				
UN number: UN1739	Proper Shipping Name: Benzyl Chloroformate	Class or Division: 8	Subrisk(s): --	Packing Group: I
EmS number:	F-A, S-B			
Air Transport:	Cargo Aircraft Only.			
Marine Pollutant:	Marine Pollutant			
15. REGULATORY INFORMATION				
Toxic Substance Control Act (TSCA 8b.): This product is ON the EPA Toxic Substances Control Act (TSCA) inventory.				
US Federal Regulations				
CERCLA Hazardous substance and Reportable Quantity:				
SARA 313:	Not Listed			
SARA 302:	Not Listed			
State Regulations				
Massachusetts	Not Listed			
New Jersey	Not Listed			
Pennsylvania	Not Listed			
California Proposition 65:	Not Listed			
Other Information				
NFPA Rating:			HMIS Classification:	
Health:	3		Health:	3
Flammability:	2		Flammability:	2
Instability:	1		Instability:	1
International Inventories				
WHMIS hazard class:	E: Corrosive material. B3: Combustible Liquid. D1A: Materials causing immediate and serious toxic effects. (Very Toxic)			

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16. OTHER INFORMATION

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide for technically qualified personnel. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Paushak Ltd. extends no warranties, makes no representations and assumes no responsibility as to the accuracy, completeness or suitability of this data for any third party use & shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.