Paushak Limited

Safety Data Sheet

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

Product name	:	Isopropyl Chloroformate
CAS No.	:	108-23-6
Company	:	Paushak Limited At: Panelav, PO:Tajpura, Taluka: Halol Distirict: 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 2
Acute toxicity (Oral) Category 4
Acute toxicity (Inhalation) Category 3
Skin corrosion/irritation Category 1B
Acute toxicity (inhalation), Hazard Category 2

Signal word:
Danger

Hazard Statement(s):

H225: Highly flammable liquid and vapour.

H302 – Harmful if swallowed.

H314: Causes severe skin burns and eye damage.

H317: May cause an allergic skin reaction.

H330: Fatal if inhaled.

Pictogram(s) or Symbol(s):



Precautionary Statement(s):

P202: Do not handle until all safety precautions have been read and understood.
P220: Keep away from clothing and other combustible materials.
P210: Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P260: Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P280: Wear protective gloves/ protective clothing/ eye protection/ face protection.
P308 + P313: IF exposed or concerned: Get medical advice/attention.
P301 + P310: IF SWALLOWED; Immediately call a POISON CENTER/doctor.
P305 + P351 + P338: IF IN EYES; Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313: If eye irritation persists: Get medical advice/attention.

Supplemental Hazard Statements:
None

Hazards not otherwise classified:
No data available

Other hazards:
This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.
Lachrymator.
The substance has no other known specific hazards for human or environment.
Information concerning specific hazards for human and environment: see Section 11.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance/Mixture:	Substance
Components:	Isopropyl Chloroformate
Percent:	>99.7 %
CAS Number:	108-23-6
EC Number:	203-563-2
Molecular Weight:	122.5
Chemical Formula:	$C_4H_7ClO_2$
Synonyms:	Formic acid chlorine, isopropyl ester
CA Index:	No data available

4. FIRST AID MEASURES

General advice:	Consult a physician. Show this safety data sheet to the doctor in attendance.
Inhalation:	If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.
Skin contact:	Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.
Eye contact:	Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.
Ingestion:	Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.
Most important symptoms and effects, both acute and delayed:	Harmful if swallowed. Causes severe skin burns and eye damage. Fatal if inhaled.
Immediate medical attention:	No data available

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media:	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Unsuitable extinguishing media for safety reasons:	Do not use water jet.
Specific hazards arising from the chemical	
Hazardous combustion products:	Carbon oxides, Hydrogen chloride gas
Other specific hazards:	No data available
Advice for firefighters:	Wear self-contained breathing apparatus for firefighting if necessary.
Further information:	Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures:	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. For personal protection see section 8.
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).
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.

7. HANDLING AND STORAGE

Precautions for safe handling:	Avoid contact with skin, eyes and clothing. Avoid inhalation of vapour or mist. Keep away from sources of ignition - No smoking. Do not eat, drink and smoke in the workplace. Take measures to prevent the build-up of

	electrostatic charge. After the handling of the product and before breaks or before eating wash your hands, after the work hours thorough washing (showering) is required. For precautions see section 2.2.
Conditions for safe storage, including any incompatibilities:	Store in dry place. place. 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. Recommended storage temperature ≤ 0°C Handle and store under inert gas. Vent periodically. Handle and open container with care. Moisture and heat sensitive.
Storage incompatibilities:	No data available

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure limits:	No data available
Appropriate engineering controls:	Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.
Personal protective equipment	
Respiratory protection:	Where risk assessment shows air-purifying respirators are appropriate use (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineer 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).
Eye/face 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 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. 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 situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.
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.
Control of environmental exposure:	Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state (20°C):	Liquid
Form:	Clear
Colour:	Colourless
Odour:	Pungent
Odour threshold:	Pungent
Melting point/freezing point:	-80 °C (101.3 kPa)
Boiling point/range:	101°C - 102 °C at 993 hPa
Decomposition temperature:	No data available
Density:	1.074 g/cm3 (20°C)
Relative density:	1.076 to 1.078 g/cm3 (20°C)
Partition coefficient: n-octanol/water (log Pow)	1.79 at 20°C

Flash point:	15.6 °C
Flammability (solid, gas):	No data available
pH:	No data available
Vapor pressure:	36 x 10^2 Pa at 20 °C 63 x 10^2 Pa at 57 °C
Vapor density:	4.2 (air=1)
Dynamic Viscosity:	No data available
Evaporation rate: (Butyl Acetate = 1)	No data available
Auto ignition temperature:	535 °C (101.3 kPa)
Flammability or explosive limits:	
Lower:	Lower explosion limit: 4 %(V)
Upper:	Upper explosion limit: 15 %(V)
Solubility(ies):	Water: 12.59 g/l (25 °C, pH: 6-8)
Viscosity, kinematic:	No data available

10. STABILITY AND REACTIVITY

Reactivity:	Not stable under normal conditions.
Chemical Stability:	Stable under recommended storage conditions.
Possibility of Hazardous Reactions:	Reacts violently with water.
Conditions to avoid:	Heat, flames and sparks. Extremes of temperature and direct sunlight. Do not store above 0°C.
Incompatible materials:	Water, alkalis, acids, metals, amines, alcohols, oxidising agents.
Hazardous Decomposition Products:	In case of thermal decomposition: carbon monoxide, carbon dioxide and hydrochloric acid.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity:	LD50 (oral, rat): 468.3 to 632.4 mg/kg bw LD50 (oral, rat): ca. 544.2 mg/kg bw LD50 (dermal, rabbit): 11300 mg/kg bw LC50 (inhalative, rat): 299 ppm/1h
Skin corrosion/irritation:	Causes severe skin burns and eye damage.
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:	No data available
Potential Health Effects:	No data available
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:	In case of hydrolysis hydrochloric acid, carbon dioxide and isopropanol is formed, which is completely soluble in water. Henry's Law constant: 0.004 atm m3/mol (25 °C, 101.3 kPa)
Other adverse effects:	No data available.

13. DISPOSAL CONSIDERATIONS

Disposal of product:	Burn in a chemical incinerator equipped with an afterburner and scrubber b highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company.
Disposal of container:	Dispose of as unused product.
Other considerations:	No data available

14. TRANSPORT INFORMATION

DOT (US)

UN number:	Proper Shipping Name:	Class or Division:	Subrisk(s):	Packing Group:
UN 2407	ISOPROPYL CHLOROFORMATE	6.1	3, 8	I

IATA

UN number:	Proper Shipping Name:	Class or Division:	Subrisk(s):	Packing Group:
UN 2407	Air transport of the substance is PROHIBITED!	-	-	-

IMDG

UN number:	Proper Shipping Name:	Class or Division:	Subrisk(s):	Packing Group:
UN 2407	ISOPROPYL CHLOROFORMATE	6.1	3, 8	I

EmS number: No data available

15. REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture:
This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

Chemical safety assessment: For this product a chemical safety assessment was not carried out.

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.