

Material Safety Data Sheet

ISOBUTYRYL CHLORIDE

Section 1 - Product and Company Information

Substance	: Isobutyryl Chloride, Isobutanoyl chloride, chloroisopropyl ketone, dimethyl acetyl chloride, isobutyric acid chloride, 2-methyl propanoyl chloride
Trade Name	: Isobutyryl Chloride
Chemical family	: Carboxylic Acid Chloride
Company	: Shiva Pharmachem Ltd. Plot No. 588, Village Luna – 391440 Taluka: Padra, District: Vadodara, Gujarat, India.
Phone No.	: +91 2662-221021 / 224360
Fax No.	: +91 2662 223314

Section 2 – Hazards Identification

2.1 Classification of the substances or mixture

Classification according to regulations (EC) no 1272 / 2008 (EU GHS/CLP)

Flammable liquid (Category 2), Skin Corrosion, (Category 1A)

Classification according to EU directives 67/548/EEC or 1999/45/EC

Causes severe burn, Highly Flammable

2.2 Labeling elements

Labeling according to EC 1272 / 2008 (CLP)

Pictogram



Single word

Danger

Hazard Elements

H225

Highly flammable liquid and vapour.

H314

Causes severe skin burn and eye damage

Precautionary statements

P210

Keep away from heat/spark/open flame/hot surface - No smoking

P280

Wear protective gloves/protective clothing/eye and face protection

P305 + P351 + P338 IF IN EYES: Rinse cautiously for several minutes.

P310 Immediately call physician

According to EU directives 67/548/EEC as amended

Material Safety Data Sheet

Hazard symbol(s)



R PHRASE (s)

R11

Highly flammable
Causes severe burn

R35

S PHRASE (s)

S16

Keep away from source of ignition – No smoking

S23

Do not breath gas/vapour/fumes/spray.

S26

In case of contact with eyes rinse immediately with plenty of water and seek medical advice.

S36

Wear suitable protective clothing, gloves and eye/face protection.

S45

In case of accident or you feel unwell, seek medical advice. (Show the label where possible)

2.3 Other hazard

Lachrymator. Stench

Section 3 – Composition / Information on Ingredients

Product Name	CAS No.	EC NO.	Mol. Formula	Mol. Weight.
Isobutyryl Chloride	79-30-1	201-194-1	C ₄ H ₇ ClO	106.55 g/mol

Section 4 – First Aid Measures

4.1 Description of first aid measure

General advice

Consult to physician. Show this safety data to the doctor.

Inhalation

If inhaled, move person into fresh air, If Not breathing give artificial respiration. Consult physician.

Skin Contact

In Case of skin contact, flush with copious amounts of water for at least 15 minute. Remove contaminated clothing and shoes. Call a Physician.

Eye Contact

In Case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

Ingestion

If Swallowed, wash out mouth with water provided person is conscious. Call a physician immediately.

4.2 Most important symptoms and effect, both acute and delayed.

Material is extremely destructive to tissues of mucous membrane and upper respiratory tract, eyes and skin. Cough, shortness of breath, headache, nausea.

Material Safety Data Sheet

Section 5 – Fire Fighting Measures

Extinguishing Media

Suitable: For Small Fires, Use media such as "alcohol resistant" foam, dry chemical, or carbon dioxide. For large fires, apply water from as far as possible. Use very large quantities (flooding) of water applied as a mist or spray; solid streams of water may be ineffective. Cool all affected containers with flooding quantities of water.

Special Risks

Specific Hazard(s): Flammable liquid. Emits toxic fumes under fire condition.
Explosion Hazards: Vapor may travel considerable distance to source of ignition and flash back.
Container explosion may occur under fire conditions.

Special Protective equipment for Fire Fighters

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

NFPA Hazard Code : Health 3 Fire 3 Reactivity 2

Section 6 – Accidental Release Measures

Personal precaution procedures to be followed in case of leak or spill

Use personal protective equipments. Evacuate personnel to safe area. Shut off all sources of ignition. Use non sparking tools. Avoid breathing vapour, mist or gas.

Procedures(s) of personal precaution(s)

Wear self- contained breathing apparatus, rubber boots and heavy rubber gloves.

Environmental precaution

Prevent further leakage or spillage if safe to do so. Do not let product to enter drains.

Methods for cleaning UP

Cover with dry lime or soda ash, pick up, keep in a closed container and hold for waste disposal. Ventilate area and wash spill site after material pickup is complete.

Section 7 – Handling and Storage

Handling

Directions for safe Handling: Do Not Breathe vapor. Do not allow to get in eyes, on skin and on clothing. Avoid prolonged or repeated exposure.

Storage

Conditions of Storage: Keep tightly closed. Keep away from heat and open flame. Store in a cool dark & dry place.

Special Requirements

Moisture Sensitive

Material Safety Data Sheet

Section 8 – Exposure Controls / Personal protection

Engineering Controls

Safety Shower and eye bath. Use non sparking Tools. Use only in a Chemical fume hood

General protective and hygienic measures

The usual precautionary measures for handling chemicals should be followed. Keep away from foodstuffs, beverages and feed. Remove all soiled and contaminated clothing immediately. Wash hands before breaks and at the end of work. Avoid contact with the eyes and skin.

Personal Protective Equipment

Respiratory Protection: Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). 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.

Hand Protection: Compatible chemical-resistant gloves.

Eye Protection: Chemical safety goggles.

Special Protective Measures: Face Shield (8-inch Minimum).

Section 9 – Physical and Chemical Properties

Appearance Physical State	: Liquid
Color	: Colorless
Odor	: Stench
Properties	
PH	: Acidic
BP/BP Range	: 91.0-93.0 °C
MP/MP Range	: -90.0 °C
Flash Point	: 8 °C Method: closed cup
Flammability	: Flammable
Autoignition Temp	: 325 °C
Oxidizing Properties	: Data not available
Explosion Limits	
Lower (LEL)	: 2.1 %
Upper (UEL)	: 8.2 %
Vapor Pressure	: 0.07 mmHg at 20 °C
SG/Density	: 1.02 g/cm3 at 20 °C
Refractive index	: 1.407 at 20 °C
Viscosity	: 0.55 mPa.s at 20 °C
Solvent Content	: Nil
Water Content	: Reacts with water. Not applicable
Conductivity	: Data not available
Solubility	: Miscible in non – polar aromatic organic solvent like toluene, methylene chloride.

Material Safety Data Sheet

Section 10 – Stability and reactivity

STABILITY

Stable: Stable.

Conditions to Avoid: Moisture.

Materials to Avoid: Alcohols, Oxidizing agents, Strong bases.

HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide.

HAZARDOUS POLYMERIZATION

Hazardous Polymerization: Will not occur

Section 11 – Toxicological Information

IRRITATION DATA

Eyes Rabbit 0.1 ml 24H

Remarks: Severe irritation effect.

SIGNS AND SYMPTOMS OF EXPOSURE

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin. Inhalation may result in spasm, inflammation and edema of the larynx and bronchi, chemical pneumonitis, and pulmonary edema. Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and vomiting.

ACUTE TOXICITY / ROUTE OF EXPOSURE

Oral : LD50 rat 1000 mg / kg , Moderately toxic

Skin Contact

Causes burns.

Skin Absorption

May be harmful if absorbed through the skin.

Eye Contact

Causes burns. Lachrymator.

Inhalation : LC50 rat > 0.47 to < 1.95 mg / l / 4 hrs

Material is extremely destructive to the tissue of the Mucous membranes and upper respiratory tract.

May be harmful if inhaled

Ingestion

May be harmful if swallowed.

Carcinogenicity: Not identified as probable, possible or confirm human carcinogen by IARC.

Other information: No experimental evidences available for genotoxicity (AMES test negative)

Section 12 - Ecological Information

ECOTOXICOLOGICAL EFFECTS

Test Type: LC50 Fish Species: Zebra Fish , Time: 96 h Value: > 214.0 to < 464.0 mg/l

Biodegradation: Biodegradable

Material Safety Data Sheet

Section 13 – Disposal Considerations

SUBSTANCE DISPOSAL

Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Observe all federal, state, and local environmental regulations.

Section 14 – Transport Information

RID/ADR

UN No. : 2395
Class : 3
Packaging Group : II
Subrisk : 8
Proper Shipping Name : Isobutyryl chloride

IMDG

UN No. : 2395
Class : 3
Packaging Group : II
Subrisk : 8
Proper Shipping Name : Isobutyryl chloride
Marine Pollutant : No
Severe Marine Pollutant : No

IATA

UN No. : 2395
Class : 3
Packaging Group : II
Subrisk : 8
Proper Shipping Name : Isobutyryl chloride
Inhalation Packing Group I : No

Section 15 – Regulatory Information

CLASSIFICATION AND LABELING ACCORDING TO EU DIRECTIVES

INDICATION OF DANGER: F-C

Highly Flammable. Corrosive.

R-PHRASES: 11-35

Highly flammable. Causes severe burns.

S-PHRASES: 16-23-26-36-45

Keep away from sources of ignition - no smoking. Do not breathe vapor. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

Material Safety Data Sheet

COUNTRY SPECIFIC INFORMATION

Germany

WGK: 1

Self-Classification

Section 16 - Additional Information

HMIS III rating

Health: 3 Flammability: 3 Physical hazard: 2

HMIS uses scale ranging from 0 - 4 to indicate degree of hazard. A value of zero means that substance possesses essentially no hazard; rating of 4 indicates high hazard.

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