Material Safety Data Sheet

ISOPHTHALOYL CHLORIDE

Section 1 – Product and Company Information

Substance : Isophthaloyl Chloride, 1, 3 – Benzenedicarbonyl chloride
Trade Name : Isophthaloyl Chloride
Chemical Family : 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)
Acute toxicity dermal (category 4), Skin Corrosion, (Category 1B)

Classification according to EU directives 67/548/EEC or 1999/45/EC.
Harmful in contact with skin. Causes burn.

2.2 Labeling elements
Labeling according to EC 1272 / 2008 (CLP)
Pictogram

Single word
Danger

Hazard Elements
H312 Harmful in contact with skin.
H314 Causes severe skin burn and eye damage

Precautionary statements
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

Hazard symbol(s)
Material Safety Data Sheet

Corrosive

R PHRASE (s)
R21 Harmful in contact with skin
R34 Causes burn

S PHRASE (s)
S26 In case of contact with eyes rinse immediately with plenty of water and seek medical advice.
S36/37/39 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
None

Section 3 – Composition / Information on Ingredients

<table>
<thead>
<tr>
<th>Product Name</th>
<th>CAS No.</th>
<th>EC No.</th>
<th>Mol. Formula</th>
<th>Mol. Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISOPHTHALOYL Chloride</td>
<td>99-63-8</td>
<td>202-774-7</td>
<td>C₈H₄Cl₂O₂</td>
<td>203.02 g/mol</td>
</tr>
</tbody>
</table>

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 copies 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.
Cough, shortness of breath, headache, nausea.

Section 5 – Fire Fighting Measures

CONDITIONS OF FLAMMABILITY
Water hydrolyzes material liberating acidic gas which in contact with metal surfaces can generate flammable and/or explosive hydrogen gas.

EXTINGUISHING MEDIA
Suitable: Carbon dioxide. Dry chemical powder.
Unsuitable: Do not use water.
Material Safety Data Sheet

SPECIAL RISKS
Specific Hazard(s): Emits toxic fumes under fire conditions.

SPECIAL PROTECTIVE EQUIPMENT FOR FIREFIGHTERS
Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

SPECIFIC METHOD(S) OF FIRE FIGHTING
Use water spray to cool fire-exposed containers.

Section 6 – Accidental Release Measures

PERSONAL PRECAUTION PROCEDURES TO BE FOLLOWED IN CASE OF LEAK OR SPILL
Evacuate area.

PROCEDURE(S) OF PERSONAL PRECAUTION(S)
Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves.

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 get in eyes, on skin, on clothing. Avoid prolonged or repeated exposure.

STORAGE
Conditions of Storage: Keep tightly closed.

SPECIAL REQUIREMENTS
Moisture sensitive.

Section 8 - Exposure Controls / Personal Protection

ENGINEERING CONTROLS
Safety shower and eye bath. Use only in a chemical fume hood.

GENERAL HYGIENE MEASURES
Wash contaminated clothing before reuse. Discard contaminated shoes. Wash thoroughly after handling.

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 particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator.
Material Safety Data Sheet

Hand Protection: Compatible chemical-resistant gloves.
Eye Protection: Chemical safety goggles.

Section 9 - Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance Color</td>
<td>Colorless</td>
</tr>
<tr>
<td>Form</td>
<td>Solidifies on standing below 40 °C. Clear liquid above 40°C</td>
</tr>
<tr>
<td>pH</td>
<td>Acidic</td>
</tr>
<tr>
<td>BP/BP Range</td>
<td>276 °C at 760 mmHg</td>
</tr>
<tr>
<td>MP/MP Range</td>
<td>43 - 44 °C</td>
</tr>
<tr>
<td>Flash Point</td>
<td>180 °C Method: closed cup</td>
</tr>
<tr>
<td>Flammability</td>
<td>Not flammable</td>
</tr>
<tr>
<td>Autoignition Temp</td>
<td>Data not available</td>
</tr>
<tr>
<td>Oxidizing Properties</td>
<td>Product is not oxidizing</td>
</tr>
<tr>
<td>Explosive Properties</td>
<td>Data not available</td>
</tr>
<tr>
<td>Lower Explosion Limits</td>
<td>1.5 %</td>
</tr>
<tr>
<td>Upper Explosion Limits</td>
<td>8.9 %</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>0.08 hPa at 38 °C, 0.04 hPa at 25 °C</td>
</tr>
<tr>
<td>SG/Density</td>
<td>0.82 at 50°C</td>
</tr>
<tr>
<td>Vapor Density</td>
<td>7.0 at 25 °C</td>
</tr>
<tr>
<td>Solvent Content</td>
<td>Nil</td>
</tr>
<tr>
<td>Water Content</td>
<td>Decompose when contact with water.</td>
</tr>
<tr>
<td>Solubility</td>
<td>Miscible with toluene, methylene, ethylene chloride.</td>
</tr>
</tbody>
</table>

Section 10 - Stability and Reactivity

STABILITY
Stable: Stable at normal conditions of temperature and pressure.
Conditions to Avoid: Humid air steam. Reacts with water to form hydrochloric acid.
Materials to Avoid: Water, Alcohols, Oxidizing agents, Strong bases.

HAZARDOUS DECOMPOSITION PRODUCTS
Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide, Hydrogen chloride gas.

HAZARDOUS POLYMERIZATION
Hazardous Polymerization: Will not occur

Section 11 - Toxicological Information

ACUTE TOXICITY
LD50 Oral Rat 2200 mg/kg
LD50 Oral Mouse 2221 mg/kg

Behavioral: Somnolence (general depressed activity).
LD50 Oral Rabbit 1175 mg/kg
Material Safety Data Sheet


LD50  Skin  Rabbit  1410 mg/kg

IRRITATION DATA
Skin  Rabbit  200 mg
Remarks: Open irritation test Eyes Rabbit 40 mg Remarks: Mild irritation effect

SENSITIZATION
Sensitization: Prolonged or repeated exposure may cause allergic reactions in certain sensitive individuals.

MUTAGENICITY
Did not cause genetic damage in animal and cultured bacterial cell.

SIGNS AND SYMPTOMS OF EXPOSURE
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. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract, eyes, and skin. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

ROUTE OF EXPOSURE

Skin Contact
Causes burn.

Skin Absorption
Harmful if absorbed through skin.

Eye Contact
Causes burns. Lachrymator.

Inhalation
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.

Section 12 - Ecological Information

AQUATIC TOXICITY

LC50 Fathead minnow 133.7 mg/l 96hrs
Material Safety Data Sheet

BIODEGRADABILITY: Readily biodegradable.

BIOACCUMULATION: Bioaccumulation is unlikely.

Section 13 - Disposal Considerations

SUBSTANCE DISPOSAL
Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Do not re-use empty containers. Observe all federal, state, and local environmental regulations.

Section 14 - Transport Information

DOT Regulations
UN No. : 3096
Hazard Class : 8
Packing Group : II
Proper Shipping Name : Corrosive solid, acidic, organic, n.o.s. (Isophthaloyl chloride)

RID/ADR
UN No : 3261
Hazard Class : 8
Packing Group : II
Proper Shipping Name : Corrosive solid, acidic, organic, n.o.s. (Isophthaloyl chloride)

IMDG
UN No : 3261
Hazard Class : 8
Packing Group : II
Proper Shipping Name : Corrosive solid, acidic, organic, n.o.s. (Isophthaloyl chloride)
Marine Pollutant : No
Severe Marine Pollutant : No
Technical Name : Required

IATA
UN No : 3261
Hazard Class : 8
Packing Group : II
Proper Shipping Name : Corrosive solid, acidic, organic, n.o.s. (Isophthaloyl chloride)
Inhalation Packing Group I : No
Technical Name : Required

Section 15 - Regulatory Information

CLASSIFICATION AND LABELING ACCORDING TO EU DIRECTIVES
**Material Safety Data Sheet**

**INDICATION OF DANGER:** C  
Corrosive

**R-PHRASES:** 21/34  
Harmful in contact with skin. Causes burns. Irritating to respiratory system.

**S-PHRASES:** 26/36-37/39/45  
In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing, gloves, and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately.

**COUNTRY SPECIFIC INFORMATION**

Germany  
WGK: 1  
ID-Number: 7152

**Section 16 - Additional Information**

Other information

<table>
<thead>
<tr>
<th></th>
<th>NEPS</th>
<th>HMIS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Flammability</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Reactivity/physical hazard</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Shiva Pharmachem Ltd. be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incident, consequential or exemplary damages, howsoever arising, even if Shiva Pharmachem Ltd has been advised of the possibility of such damages.