MATERIAL SAFETY DATA SHEET
BUTYRYL CHLORIDE

1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

MSDS Name: Butyryl chloride
Synonyms: Butanoyl chloride; Butyric acid chloride
Company Identification: Sisco Research Laboratories Pvt. Ltd.
Andheri (East), Mumbai – 400 099.
Tel: +91 22 2687 2601
Fax: +91 22 2687 8241
Website: www.srlchem.com

2 - COMPOSITION, INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>CAS#</th>
<th>Chemical Name:</th>
<th>%</th>
<th>EINECS#</th>
</tr>
</thead>
<tbody>
<tr>
<td>141-75-3</td>
<td>Butyryl chloride</td>
<td>98%</td>
<td>205-498-5</td>
</tr>
</tbody>
</table>

3 - HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Potential Health Effects
Eye: Causes eye burns. Lachrymator (substance which increases the flow of tears).
Skin: Causes skin burns.
Ingestion: Causes gastrointestinal tract burns.
Inhalation: Causes chemical burns to the respiratory tract. Inhalation may be fatal as a result of spasm, inflammation, edema of the larynx and bronchi, chemical pneumonitis and pulmonary edema.

Chronic:

4 - FIRST AID MEASURES

Eyes: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid immediately.
Skin: Get medical aid immediately. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
Ingestion: Get medical aid immediately. Do NOT induce vomiting. If conscious and alert, rinse mouth and drink 2-4 cupfuls of milk or water. Wash mouth out with water.
Inhalation: Get medical aid immediately. Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

Notes to Physician: Treat symptomatically and supportively.
### 5 - FIRE FIGHTING MEASURES

**General Information:** As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Flammable liquid and vapor.

**Extinguishing Media:** Do NOT use water directly on fire. Use foam, dry chemical, or carbon dioxide.

### 6 - ACCIDENTAL RELEASE MEASURES

**General Information:** Use proper personal protective equipment as indicated in Section 8.

**Spills/Leaks:** Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Avoid runoff into storm sewers and ditches which lead to waterways. Use water spray to disperse the gas/vapor. Remove all sources of ignition. Use a spark-proof tool.

### 7 – HANDLING AND STORAGE

**Handling:** Use spark-proof tools and explosion proof equipment. Do not breathe dust, vapor, mist, or gas. Do not get in eyes, on skin, or on clothing. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Use only in a chemical fume hood.

**Storage:** Keep away from sources of ignition. Store in a cool, dry place. Store in a tightly closed container. Flammables-area.

### 8 – EXPOSURE CONTROLS, PERSONAL PROTECTION

**Engineering Controls:** Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.

**Exposure Limits**

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**Personal Protective Equipment**

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<tr>
<th>Eyes:</th>
<th>Wear chemical splash goggles.</th>
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<tr>
<td>Skin:</td>
<td>Wear appropriate protective gloves to prevent skin exposure.</td>
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<tr>
<td>Clothing:</td>
<td>Wear appropriate protective clothing to prevent skin exposure.</td>
</tr>
<tr>
<td>Respirators:</td>
<td>Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.</td>
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</table>

### 9 - PHYSICAL AND CHEMICAL PROPERTIES

**Physical State:** Liquid
Boiling Point: 102 deg C
Specific Gravity/Density: 1.017-1.020
Molecular Formula: C₄H₇ClO
Molecular Weight: 106.55

10 - STABILITY AND REACTIVITY

Chemical Stability: Stable under normal temperatures and pressures.
Conditions to Avoid: Incompatible materials, ignition sources, exposure to moist air or water.

Incompatibilities with Other Materials:
Water, strong oxidizing agents, bases, alcohols.

Hazardous Decomposition Products: Hydrogen chloride, carbon monoxide, carbon dioxide.
Hazardous Polymerization: Has not been reported.

11 - TOXICOLOGICAL INFORMATION

RTECS#: CAS# 141-75-3: None listed
LD50/LC50: RTECS: Not available.
Carcinogenicity: Butyryl chloride - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.

12 - ECOLOGICAL INFORMATION

Not available

13 - DISPOSAL CONSIDERATIONS

Dispose of in a manner consistent with federal, state, and local regulations.

14 - TRANSPORT INFORMATION

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<tr>
<th>IATA</th>
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<th>RID/ADR</th>
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<td>Butyryl Chloride</td>
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15 - REGULATORY INFORMATION

European/International Regulations
European Labeling in Accordance with EC Directives
Hazard Symbols: F C
Risk Phrases: R 11 Highly flammable. R 34 Causes burns.
Safety Phrases: S 16 Keep away from sources of ignition - No smoking. S 23 Do not inhale gas/fumes/vapour/spray. S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S 36 Wear suitable protective clothing. S 45 In case of accident or if you feel unwell, seek
medical advice immediately (show the label where possible).

WGK (Water Danger/Protection) CAS# 141-75-3: 1
Canada  CAS# 141-75-3 is listed on Canada's DSL List
US Federal
TSCA  CAS# 141-75-3 is listed on the TSCA Inventory.

16 - ADDITIONAL INFORMATION

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