MATERIAL SAFETY DATA SHEET
D-GULONIC ACID γ-LACTONE

1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

MSDS Name: D-Gulonic Acid γ-Lactone
Synonyms: None
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>6322-07-2</td>
<td>D-Gulonic Acid γ-Lactone</td>
<td>98%</td>
<td>228-678-5</td>
</tr>
</tbody>
</table>

3 - HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW
Not available

Potential Health Effects
The toxicological properties of this substance have not been fully investigated.

4 - FIRST AID MEASURES

Eyes: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids.
Skin: Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
Ingestion: Do NOT induce vomiting. If conscious and alert, rinse mouth and drink 2-4 cupfuls of milk or water.
Inhalation: Remove from exposure and move to fresh air immediately.
Notes to Physician:

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. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.
Extinguishing Media: In case of fire, use water, dry chemical, chemical foam, or alcohol-resistant foam.

6 - ACCIDENTAL RELEASE MEASURES

General Information: Use proper personal protective equipment as indicated in Section 8.
Spills/Leaks: Clean up spills immediately, observing precautions in the Protective Equipment section. Sweep up, then place into a suitable container for disposal.

### 7 – HANDLING AND STORAGE

**Handling:** Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Avoid contact with eyes, skin, and clothing. Avoid ingestion and inhalation.

**Storage:** Store in a cool, dry place. Keep container closed when not in use. Keep refrigerated. (Store below 4°C/39°F.)

### 8 – EXPOSURE CONTROLS, PERSONAL PROTECTION

**Engineering Controls:** Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits. Use process enclosure, local exhaust ventilation, or other engineering controls to control airborne levels.

**Exposure Limits**

| CAS# 6322-07-2 |

**Personal Protective Equipment**

| Eyes: | Wear safety glasses and chemical goggles if splashing is possible. |
| Skin: | Wear safety glasses and chemical goggles if splashing is possible. |
| Clothing: | Wear appropriate protective clothing to minimize contact with skin. |
| Respirators: | Wear a NIOSH/MSHA or European Standard EN 149 approved full-facepiece airline respirator in the positive pressure mode with emergency escape provisions. |

### 9 - PHYSICAL AND CHEMICAL PROPERTIES

| Physical State: | Solid |
| Melting Point: | 182 - 185 deg C |
| Molecular Formula: | C₆H₁₀O₆ |
| Molecular Weight: | 178.14 |

### 10 - STABILITY AND REACTIVITY

| Chemical Stability: | Stable under normal temperatures and pressures. |
| Conditions to Avoid: | Incompatible materials. |
| Incompatibilities with Other Materials: | Strong oxidizing agents. |
| Hazardous Decomposition Products: | Irritating and toxic fumes and gases. |
| Hazardous Polymerization: | Has not been reported. |

### 11 - TOXICOLOGICAL INFORMATION

| RTECS#: | CAS# 6322-07-2: None listed |
LD50/LC50: RTECS: Not available.
Carcinogenicity: D(-)-GULONIC ACID GAMMA-LACTONE - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.

Other:

12 - ECOLOGICAL INFORMATION
Not available

13 - DISPOSAL CONSIDERATIONS
Dispose of in a manner consistent with federal, state, and local regulations.

14 - TRANSPORT INFORMATION

<table>
<thead>
<tr>
<th>Shipping Name:</th>
<th>IATA</th>
<th>IMO</th>
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<tbody>
<tr>
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<td>Not available</td>
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<td>UN Number:</td>
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<tr>
<td>Packing Group:</td>
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15 - REGULATORY INFORMATION

European/International Regulations
European Labeling in Accordance with EC Directives
Hazard Symbols: Not available
Risk Phrases:
Safety Phrases: S 24/25 Avoid contact with skin and eyes.
WGK (Water Danger/Protection)CAS# 6322-07-2: Not available
US Federal
TSCA CAS# 6322-07-2 is not listed on the TSCA Inventory. It is for research and development use only.

16 - ADDITIONAL INFORMATION

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