SAFETY DATA SHEET
Lipoxygenase from Glycine max (soybean) - Purified
according to Regulation (EC) No. 1907/2006 as amended by (EC) No. 1272/2008

Section 1. Identification of the Substance/Mixture and of the Company/Undertaking

1.1 Product Code: 60700
Product Name: Lipoxygenase from Glycine max (soybean) - Purified
Synonyms: 13-S-Lipoxygenase-1; 15-Lipoxygenase; Lipoxygenase Lx3;

1.2 Relevant identified uses of the substance or mixture and uses advised against:
Relevant identified uses: For research use only, not for human or veterinary use.

1.3 Details of the Supplier of the Safety Data Sheet:

Company Name: Cayman Chemical Company
1180 E. Ellsworth Rd.
Ann Arbor, MI 48108

Web site address: www.caymanchem.com
Information: Cayman Chemical Company +1 (734)971-3335

1.4 Emergency telephone number:
Emergency Contact: CHEMTREC Within USA and Canada: +1 (800)424-9300
CHEMTREC Outside USA and Canada: +1 (703)527-3887

Section 2. Hazards Identification

2.1 Classification of the Substance or Mixture:
Skin Corrosion/Irritation, Category 3
Serious Eye Damage/Eye Irritation, Category 2

2.2 Label Elements:

GHS Signal Word: Warning

GHS Hazard Phrases:
H316: Causes mild skin irritation.
H319: Causes serious eye irritation.

GHS Precaution Phrases:
P264: Wash (hands) thoroughly after handling.
P280: Wear (protective gloves/protective clothing/eye protection/face protection).

GHS Response Phrases:
P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P332+313: If skin irritation occurs, get medical advice/attention.
P337+313: If eye irritation persists, get medical advice/attention.

GHS Storage and Disposal Phrases:
Please refer to Section 7 for Storage and Section 13 for Disposal information.
SAFETY DATA SHEET
Lipoxygenase from Glycine max (soybean) - Purified

2.3 Adverse Human Health Effects and Symptoms:
Causes mild skin irritation.
Causes serious eye irritation.
Material may be irritating to the mucous membranes and upper respiratory tract.
May be harmful by inhalation, ingestion, or skin absorption.
May cause respiratory system irritation.
To the best of our knowledge, the toxicological properties have not been thoroughly investigated.

Section 3. Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>CAS # / RTECS #</th>
<th>Hazardous Components (Chemical Name)/REACH Registration No.</th>
<th>Concentration</th>
<th>EC No./EC Index No.</th>
<th>GHS Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>NA NA</td>
<td>Lipoxygenase from Glycine max (soybean) - Purified</td>
<td>&lt; 1.0 %</td>
<td>NA NA</td>
<td>No data available.</td>
</tr>
<tr>
<td>56-81-5 MA80500000</td>
<td>Glycerol</td>
<td>10.0 %</td>
<td>200-289-5 NA</td>
<td>Skin Corr. 3: H316 Eye Damage 2B: H320</td>
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<tr>
<td>77-86-1 TY29000000</td>
<td>Trizma base</td>
<td>0.002 %</td>
<td>201-064-4 NA</td>
<td>Skin Corr. 2: H315 Eye Damage 2: H319 STOT (SE) 3: H335</td>
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<tr>
<td>7732-18-5 ZC01100000</td>
<td>Water</td>
<td>90.0 %</td>
<td>231-791-2 NA</td>
<td>No data available.</td>
</tr>
</tbody>
</table>

Section 4. First Aid Measures

4.1 Description of First Aid Measures:
In Case of Inhalation: Remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Get immediate medical attention.
In Case of Skin Contact: Immediately wash skin with soap and plenty of water for at least 15 minutes. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.
In Case of Eye Contact: Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes. Have eyes examined and tested by medical personnel.
In Case of Ingestion: Wash out mouth with water provided person is conscious. Never give anything by mouth to an unconscious person. Get medical attention. Do NOT induce vomiting unless directed to do so by medical personnel.

Section 5. Fire Fighting Measures

5.1 Suitable Extinguishing Media:
Use alcohol-resistant foam, carbon dioxide, water, or dry chemical spray.
Use water spray to cool fire-exposed containers.

Unsuitable Extinguishing Media:
A solid water stream may be inefficient.

5.2 Flammable Properties and Hazards:
Emits toxic fumes under fire conditions.
No data available.
Flash Pt: No data.
Explosive Limits: LEL: No data. UEL: No data.
Autoignition Pt: No data.

5.3 Fire Fighting Instructions:
As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent), and full protective gear to prevent contact with skin and eyes.
### Section 6. Accidental Release Measures

6.1 **Protective Precautions,**  
Protective Equipment and Emergency Procedures:  
Avoid breathing vapors and provide adequate ventilation.  
As conditions warrant, wear a NIOSH approved self-contained breathing apparatus, or respirator, and appropriate personal protection (rubber boots, safety goggles, and heavy rubber gloves).

6.2 **Environmental Precautions:**  
Take steps to avoid release into the environment, if safe to do so.

6.3 **Methods and Material For Containment and Cleaning:**  
Contain spill and collect, as appropriate.  
Transfer to a chemical waste container for disposal in accordance with local regulations.

### Section 7. Handling and Storage

7.1 **Precautions To Be Taken in Handling:**  
Avoid breathing dust/fume/gas/mist/vapours/spray.  
Avoid prolonged or repeated exposure.

7.2 **Precautions To Be Taken in Storing:**  
Keep container tightly closed.  
Store in accordance with information listed on the product insert.

### Section 8. Exposure Controls/Personal Protection

#### 8.1 Exposure Parameters:

<table>
<thead>
<tr>
<th>CAS #</th>
<th>Partial Chemical Name</th>
<th>Britain EH40</th>
<th>France VL</th>
<th>Europe</th>
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</thead>
<tbody>
<tr>
<td>NA</td>
<td>Lipoxynase from Glycine max (soybean) - Purified</td>
<td>No data.</td>
<td>No data.</td>
<td>No data.</td>
</tr>
<tr>
<td>56-81-5</td>
<td>Glycerol</td>
<td>TWA: 10 mg/m^3</td>
<td>TWA: 10 mg/m^3</td>
<td>No data.</td>
</tr>
<tr>
<td>77-86-1</td>
<td>Trizma base</td>
<td>No data.</td>
<td>No data.</td>
<td>No data.</td>
</tr>
<tr>
<td>7732-18-5</td>
<td>Water</td>
<td>No data.</td>
<td>No data.</td>
<td>No data.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CAS #</th>
<th>Partial Chemical Name</th>
<th>OSHA TWA</th>
<th>ACGIH TWA</th>
<th>Other Limits</th>
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</thead>
<tbody>
<tr>
<td>NA</td>
<td>Lipoxynase from Glycine max (soybean) - Purified</td>
<td>No data.</td>
<td>No data.</td>
<td>No data.</td>
</tr>
<tr>
<td>56-81-5</td>
<td>Glycerol</td>
<td>PEL: 15 (dust); 5 (resp.) mg/m^3</td>
<td>TLV: 10 mg/m^3</td>
<td>No data.</td>
</tr>
<tr>
<td>77-86-1</td>
<td>Trizma base</td>
<td>No data.</td>
<td>No data.</td>
<td>No data.</td>
</tr>
<tr>
<td>7732-18-5</td>
<td>Water</td>
<td>No data.</td>
<td>No data.</td>
<td>No data.</td>
</tr>
</tbody>
</table>

#### 8.2 Exposure Controls:

8.2.1 **Engineering Controls:**  
Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.

8.2.2 **Personal protection equipment:**

- **Eye Protection:** Safety glasses  
- **Protective Gloves:** Compatible chemical-resistant gloves  
- **Other Protective Clothing:** Lab coat  
- **Respiratory Equipment** (Specify Type): NIOSH approved respirator, as conditions warrant.  
- **Work/Hygienic/Maintenance Practices:**  
  - Do not take internally.  
  - Facilities storing or utilizing this material should be equipped with an eyewash and a safety shower.  
  - Wash thoroughly after handling.  
  - No data available.
Section 9. Physical and Chemical Properties

9.1 Information on Basic Physical and Chemical Properties

Physical States: [ ] Gas  [X] Liquid  [ ] Solid

Appearance and Odor: A solution in 0.1 M Tris-HCl, pH 7.0, containing 10% glycerol

Melting Point: No data.

Boiling Point: No data.

Flash Pt: No data.

Evaporation Rate: No data.

Flammability (solid, gas): No data available.

Explosive Limits: LEL: No data.  UEL: No data.

Vapor Pressure (vs. Air or mm Hg): No data.

Vapor Density (vs. Air = 1): No data.

Specific Gravity (Water = 1): No data.

Solubility in Water: No data.

Autoignition Pt: No data.

9.2 Other Information

Percent Volatile: No data.

Section 10. Stability and Reactivity

10.1 Reactivity: No data available.

10.2 Stability: Unstable [ ]  Stable [X]

10.3 Stability Note(s): Stable if stored in accordance with information listed on the product insert.

10.4 Conditions To Avoid: No data available.

10.5 Incompatibility - Materials

To Avoid: strong oxidizing agents

10.6 Hazardous

Decomposition or Byproducts: carbon dioxide

carbon monoxide

Section 11. Toxicological Information

11.1 Information on Toxicological Effects: The toxicological effects of this product have not been thoroughly studied.

Toxicological Effects: Glycerol - Irritation Data: Eyes (rabbit): 500 mg (24h) mild; Skin (rabbit): 500 mg (24h) mild;

Chronic Toxicological Effects: Glycerol - Investigated as a mutagen, reproductive effector, and tumorigen.

See actual entry in RTECS for complete information.

Glycerol RTECS Number: MA8050000

Carcinogenicity: NTP? No  IARC Monographs? No  OSHA Regulated? No

<table>
<thead>
<tr>
<th>CAS #</th>
<th>Hazardous Components (Chemical Name)</th>
<th>NTP</th>
<th>IARC</th>
<th>ACGIH</th>
<th>OSHA</th>
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<tbody>
<tr>
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<td>Lipoxygenase from Glycine max (soybean) - Purified</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
</tr>
<tr>
<td>56-81-5</td>
<td>Glycerol</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
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<tr>
<td>77-86-1</td>
<td>Trizma base</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
</tr>
<tr>
<td>7732-18-5</td>
<td>Water</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
</tr>
</tbody>
</table>
SAFETY DATA SHEET
Lipoxygenase from Glycine max (soybean) - Purified

Section 12. Ecological Information

12.1 Toxicity:
Avoid release into the environment.
Runoff from fire control or dilution water may cause pollution.

12.2 Persistence and Degradability:
No data available.

12.3 Bioaccumulative Potential:
No data available.

12.4 Mobility in Soil:
No data available.

12.5 Results of PBT and vPvB assessment:
No data available.

12.6 Other adverse effects:
No data available.

Section 13. Disposal Considerations

13.1 Waste Disposal Method:
Dispose in accordance with local, state, and federal regulations.

Section 14. Transport Information

14.1 LAND TRANSPORT (US DOT):
DOT Proper Shipping Name: Not dangerous goods.
DOT Hazard Class:
UN/NA Number:

14.1 LAND TRANSPORT (European ADR/RID):
ADR/RID Shipping Name: Not dangerous goods.
UN Number:
Hazard Class:

14.3 AIR TRANSPORT (ICAO/IATA):
ICAO/IATA Shipping Name: Not dangerous goods.
Additional Transport Information:
Transport in accordance with local, state, and federal regulations.

Section 15. Regulatory Information

EPA SARA (Superfund Amendments and Reauthorization Act of 1986) Lists

<table>
<thead>
<tr>
<th>CAS #</th>
<th>Hazardous Components (Chemical Name)</th>
<th>S. 302 (EHS)</th>
<th>S. 304 RQ</th>
<th>S. 313 (TRI)</th>
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<tbody>
<tr>
<td>NA</td>
<td>Lipoxygenase from Glycine max (soybean) - Purified</td>
<td>No</td>
<td>No</td>
<td>No</td>
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<tr>
<td>56-81-5</td>
<td>Glycerol</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>77-86-1</td>
<td>Trizma base</td>
<td>No</td>
<td>No</td>
<td>Yes-Cat. N106</td>
</tr>
<tr>
<td>7732-18-5</td>
<td>Water</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CAS #</th>
<th>Hazardous Components (Chemical Name)</th>
<th>Other US EPA or State Lists</th>
</tr>
</thead>
<tbody>
<tr>
<td>NA</td>
<td>Lipoxygenase from Glycine max (soybean) - Purified</td>
<td>CAA HAP,ODC: No; CWA NPDES: No; TSCA: No; CA PROP.65: No</td>
</tr>
<tr>
<td>56-81-5</td>
<td>Glycerol</td>
<td>CAA HAP,ODC: No; CWA NPDES: No; TSCA: Yes - Inventory; CA PROP.65: No</td>
</tr>
<tr>
<td>77-86-1</td>
<td>Trizma base</td>
<td>CAA HAP,ODC: HAP; CWA NPDES: No; TSCA: Yes - Inventory; CA PROP.65: No</td>
</tr>
<tr>
<td>7732-18-5</td>
<td>Water</td>
<td>CAA HAP,ODC: No; CWA NPDES: No; TSCA: Yes - Inventory; CA PROP.65: No</td>
</tr>
</tbody>
</table>
### Regulatory Information

**Statement:**

This SDS was prepared in accordance with 29 CFR 1910.1200 and Regulation (EC) No.1272/2008.

### Section 16. Other Information

**Revision Date:** 06/04/2015

**Additional Information About This Product:** No data available.

**Company Policy or Disclaimer:**

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