Section 1    Identification of The Substance/Preparation and of The Company/Undertaking

Product Details/Trade Name: TECHNICAL Grade Glycerin, Vegetable Derived Sources
Application of the substance/Preparation: Emollient, Humectant, Freeze Point Suppressor
Manufacturer/Supplier:
US GLYCERIN
2025 Cascade Ridge Dr
Jackson, MI 49203
United States of America
Phone: 419-329-4280
Fax: 269-383-2450

Section 2    Hazards Identification

Hazard description: None
Information concerning particular Hazards for human and environment: None
Classification system: The classification is according to the latest editions of the EU-lists, and extended by company and literature data.

Section 3    Composition/Information on Ingredients

Chemical characterization
Description:
Hazardous components:
CAS: 56-81-5 Glycerine-Vegetable Sourced 100%
EINECS: 200-289-5 Glycerin Min 99.7%
### Section 4 First Aid Measures

<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Protective equipment:</td>
<td>Wear protective clothing, including breathing apparatus, for fire only.</td>
</tr>
<tr>
<td>Fire-fighting methods:</td>
<td>Evacuate area of unprotected personnel. Remain upwind of fire to avoid Hazardous vapors and decomposition products. Use water spray to cool fire-exposed containers. Do not use direct water stream. May spread fire.</td>
</tr>
<tr>
<td>Fire and explosion hazards:</td>
<td>Material will burn in fire, releasing toxic vapors. Material will not burn unless preheated. At elevated temperatures, there is a risk of exothermic polymerization (&gt;200°C).</td>
</tr>
<tr>
<td>Hazardous composition products:</td>
<td>Carbon dioxide. Carbon monoxide. Acrolein. Unidentified toxic and/or Irritating compounds.</td>
</tr>
</tbody>
</table>

### Section 5 Accidental Release Measures

<table>
<thead>
<tr>
<th>Person-related safety precautions:</th>
<th>Evacuate unprotected personnel from area. Wear protective clothing. Wear suitable gloves and eye/face protection.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measures for environmental protection:</td>
<td>Inform respective authorities in case of seepage into water course or sewage system. Do not allow to enter sewers/surface or ground water.</td>
</tr>
<tr>
<td>Measures for cleaning/collection:</td>
<td>Maintain adequate ventilation. Absorb with inert absorbent material. Place in non-leaking containers. Wash residue from spill area with water and detergent.</td>
</tr>
</tbody>
</table>
Section 6 Handling and Storage

**HANDLING**
Information for safe handling:
Use with adequate ventilation/exhaustion at the workplace. Prevent formation of aerosols. Wash after handling.

Information about fire- and explosion protection:
See Section 5.

**STORAGE**
Requirements to be met by storerooms and receptacles:
Store only in unopened, labeled and original receptacles. Keep containers tightly closed. Avoid contact with moisture. Avoid storage above 130°F (54.4 °C) and below 64°F (17.7 °C) and near incompatible materials.

Information about storage in one common storage facility:
None Required.

Further information about storage conditions:
Keep container tightly sealed when not in use.

Maximum storage temperature: 130°F (54.4 °C)

Section 7 Exposure Controls/Personal Protection

Exposure Limits:

- Belgium Minister of Labour (Belgium, 1998).
  VL: 10 mg/m3 8 hour(s).

- Tyterveyslaitos (Finland, 1998).
  TWA: 20 mg/m3 8 hour(s).

- INRS (France, 1996).
  VME: 10 mg/m3 8 hour(s).

- National Authority for Occupational Safety/Health (Ireland, 1999).
  OEL: 10 mg/m3 8 hour(s).

- Arbeidsinspectie (Netherlands, 1999).
  TGG 8 uur: 10 mg/m3 8 hour(s).

- EH40-OES (United Kingdom (UK), 1997).
  TWA: 10 mg/m3 8 hour(s).
### Section 7 Exposure Controls/Personal Protection  Continued

ACGIH (United States, 1994).
WA: 10 mg/m³ 8 hour(s). Form: Mist

OSHA Final Rule (United States, 1989).
TWA: 5 mg/m³ 8 hour(s). Form: Respirable fraction
TWA: 10 mg/m³ 8 hour(s). Form: Total dust

**Additional information about Design of Technical Facilities:**
Provide exhaust ventilation, eyewash station and safety shower.

**Personal protective equipment:**
Splash goggles. Neoprene gloves.

### Section 8 Physical and Chemical Properties

<table>
<thead>
<tr>
<th><strong>General Information</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Form:</strong></td>
<td>Oily, viscous liquid.</td>
</tr>
<tr>
<td><strong>Color:</strong></td>
<td>Colorless.</td>
</tr>
<tr>
<td><strong>Odor:</strong></td>
<td>Odorless.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Change in Condition</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Melting point/Melting range:</strong></td>
<td>17.8°C (64°F)</td>
</tr>
<tr>
<td><strong>Boiling point/Boiling range:</strong></td>
<td>290.05°C (340°F)</td>
</tr>
</tbody>
</table>

| **Molecular Weight:**           | 92.11 g/mole           |
| **Molecular Formula:**          | C₃-H₈-O₃               |
| **Danger of Explosion:**        | Product does not present an explosion hazard. |
| **Specific Gravity:**           | 1.261 (Water = 1)      |
| **Solubility in/Miscibility with water:** | Partially soluble in water. |
| **Vapor Pressure:**             | <0.001 @ 25°C          |
| **Vapor Density:**              | 3.1 (Air = 1)          |
| **Flash Point:**                | 390°F (199°C) (minimum) |
Section 9 Stability and Reactivity

Stability and reactivity: The product is stable.
Conditions to be avoided: Excessive heat. Open flames. Low temperatures.
Materials to be avoided: Reactive with oxidizing agents.
Dangerous reactions: Risk of exothermic polymerization (>200°C). Reacts violently with strong oxidizing agents.

Section 10 Toxicological Information

Acute toxicity: Oral - LD50 4090 mg/kg (mouse)
Primary irritant effect: Eyes - 500mg/24h. Mild (rabbit)
Skin 500 mg/24h mild (rabbit)
Sensitization: Not available
Carcinogenic Effects: This material is not known to cause cancer in animals or humans. This product is not listed as a carcinogenic or a potential carcinogen by the National Toxicology Program, by the I.A.R.C. Monographs or by OSHA.
Additional toxicological information: May be hazardous in case of eye contact (irritant). May be hazardous in case of skin contact (irritant). Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering. Non-hazardous in the case of ingestion.

Section 11 Ecological Information

Ecotoxic effects: Not available
General notes: The product itself and its products of degradation are not toxic.
### Section 12 Disposal Considerations

**Product:** Not a Listed Waste.

### Section 13 Transport Information

<table>
<thead>
<tr>
<th>Description of goods:</th>
<th>Chemicals, N.O.S.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maritime transport IMDG:</td>
<td>Chemicals, N.O.S.</td>
</tr>
<tr>
<td>IMDG Class:</td>
<td>Chemicals, N.O.S.</td>
</tr>
<tr>
<td>Marine Pollutant:</td>
<td>No.</td>
</tr>
<tr>
<td>Air Transport ICAO-TI and IATA-DGR:</td>
<td>Not available</td>
</tr>
<tr>
<td>ICAO/IATA Class:</td>
<td>Not available</td>
</tr>
<tr>
<td>Shipping Class:</td>
<td>55</td>
</tr>
<tr>
<td>Dot Identification Number:</td>
<td>N/A</td>
</tr>
<tr>
<td>Dot Shipping Label:</td>
<td>Not regulated by DOT</td>
</tr>
</tbody>
</table>

### Section 14 Regulator Information

- **Labeling according to EU guidelines:** Glycerine.
- **Risk phrases:** R36/38- Irritating to eyes and skin.
Section 15 Regulatory Statuary

U.S. Federal Regulatory Information:
SARA 302 Threshold Planning Quantity: N/A  SARA 304 Reportable Quantity: N/A
SARA 311 Categories:
- Acute Health Effects: None
- Chronic Health Effects: None
- Fire Hazard: No
- Sudden Release of Pressure Hazard: No
- Reactivity Hazard: No

EPA/TSCA Inventory: The components of this product are listed on the EPA/TSCA inventory of chemicals.
EPA Hazard Classification Code: Not applicable
CERCLA: No chemicals in this product are subject to the reporting requirements of CERCLA.
SARA Title III - Section 313 Supplier Notification: No Chemicals in this product exceed the DE Minimus reporting level established by SARA Title III, Section 313 and 40 CFR 372.
WHMIS Classification: Not controlled.

Section 16 Other Information

NFPA Hazard Rating:
- Health: 1 Slight
- Flammability: 1 Slight
- Reactivity: 0 Negligible

Supersedes MSDS Dated: Original 2/9/09
*Threshold Limit Value/Personal Exposure Limit
N/A = Not Applicable
N/E = Not Established

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

Department issuing MSDS: US Glycerin
Contact: William L. Zehnpfennig, Process/Chemical Engineer
Creation Date June 29, 2011 Rev 1.0001 Document USG00023658
Revision Date April 2014, Corrected New Business Address Page 1

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