1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier
Product Name VYCERIN™ GL99 Glycerine 99.7% USP

Other means of identification
Product Code GL99
Synonyms 1,2,3-propanetriol

Recommended use of the chemical and restrictions on use
Recommended Use Multi-purpose fluid.

Details of the supplier of the safety data sheet
Manufacturer Address Vantage Oleochemicals, Inc.
4650 South Racine Avenue
Chicago, IL 60609 USA
+1-773-376-9000

Emergency Telephone Number
Company Phone Number +1-773-376-9000
Emergency Telephone Number CHEMTREC International +1-703-527-3887
CHEMTREC USA: 1-800-424-9300

2. HAZARDS IDENTIFICATION

Classification
This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard.

This is not a dangerous substance or mixture according to the United Nations Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Label Elements

EMERGENCY OVERVIEW

Not Hazardous

Color Colorless Physical State Liquid Odor Odorless

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms 1,2,3-propanetriol.

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS-No.</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glycerin</td>
<td>56-81-5</td>
<td>99.7</td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES
FIRST AID MEASURES

Eye contact  
Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.

Skin contact  
Wash exposed skin with soap and plenty of water. Consult a physician if irritation occurs.

Inhalation  
Remove to fresh air and keep at rest in a position comfortable for breathing. Consult a physician if breathing is difficult or other respiratory symptoms develop.

Ingestion  
DO NOT induce vomiting. Drink 1 or 2 glasses of water. Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed

Symptoms  
None identified.

Indication of any immediate medical attention and special treatment needed

Notes to Physician  
Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media  
Use extinguishing measures appropriate to local circumstances and surrounding materials.

Unsuitable extinguishing media  
None identified.

Specific hazards arising from the chemical  
Acrolein may be formed if product is burned or strongly heated, especially in acidic conditions.

Explosion Data  
Sensitivity to Mechanical Impact  
None.

Sensitivity to Static Discharge  
None.

Protective equipment and precautions for firefighters  
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions  
Ensure adequate ventilation.

Environmental precautions

Environmental precautions  
Prevent release to surface water.

Methods and material for containment and cleaning up

Methods for Cleaning Up  
Absorb with an inert material.

7. HANDLING AND STORAGE

Precautions for safe handling

Handling  
Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Storage  
Keep containers tightly closed in a dry, cool and well-ventilated place.
8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
<th>NIOSH IDLH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glycerin 56-81-5</td>
<td>n/a</td>
<td>TWA: 15 mg/m³ (total)</td>
<td>n/a</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA: 5 mg/m³ (respirable fraction)</td>
<td></td>
</tr>
</tbody>
</table>

Appropriate engineering controls

Engineering Measures

- Safety Shower
- Eyewash station
- Ventilation system.

Individual protection measures, such as personal protective equipment

- Eye/face Protection: Safety glasses with side-shields.
- Skin and Body Protection: Impervious gloves.
- Respiratory Protection: Use NIOSH/MSHA approved respirator if exposure limit is exceeded.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Values</th>
<th>Remarks • Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH</td>
<td>7</td>
<td>Neat</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>18 °C / 64 °F</td>
<td></td>
</tr>
<tr>
<td>Boiling point/boiling range</td>
<td>290 °C / 554 °F</td>
<td></td>
</tr>
<tr>
<td>Flash Point</td>
<td>177 °C / 351 °F</td>
<td></td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>Not determined</td>
<td></td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>May burn if exposed to flames or sparks.</td>
<td></td>
</tr>
<tr>
<td>Flammability Limits in Air</td>
<td>Not determined</td>
<td></td>
</tr>
<tr>
<td>Upper flammability limits</td>
<td>Not determined</td>
<td></td>
</tr>
<tr>
<td>Lower Flammability Limit</td>
<td>Not determined</td>
<td></td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>0.000106 hPa at (20 °C)</td>
<td></td>
</tr>
<tr>
<td>Vapor Density</td>
<td>1.26</td>
<td>@ 25°C</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>Miscible</td>
<td></td>
</tr>
<tr>
<td>Water Solubility</td>
<td>-2.6</td>
<td>Calculated</td>
</tr>
<tr>
<td>Solubility in other solvents</td>
<td>Not determined</td>
<td></td>
</tr>
<tr>
<td>Partition coefficient</td>
<td>Autoignition Temperature</td>
<td>400 °C / 752 °F</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>1300 mPa s</td>
<td>@ 25 °C</td>
</tr>
<tr>
<td>Kinematic viscosity</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>Dynamic viscosity</td>
<td>oxidizer</td>
<td></td>
</tr>
</tbody>
</table>

Other Information
10. STABILITY AND REACTIVITY

Reactivity
Not reactive

Remarks
Stable under recommended storage conditions.

Chemical stability
Stable under recommended storage conditions.

Possibility of Hazardous Reactions
None under normal processing.

Hazardous Polymerization
Hazardous polymerization does not occur.

Conditions to Avoid
Extremes of temperature and direct sunlight

Incompatible materials
None known based on information supplied.

Hazardous Decomposition Products
None identified.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information
Product does not present an acute toxicity hazard based on known or supplied information

Inhalation
Inhalation of aerosol or mist may cause irritation of the respiratory tract.

Eye contact
Not irritating to eyes.

Skin contact
Not irritating to skin.

Ingestion
May cause discomfort.

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>LD50 Oral</th>
<th>LD50 Dermal</th>
<th>LC50 Inhalation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glycerin 56-81-5</td>
<td>&gt; 4,000 mg/kg (Mouse), &gt;25,000 mg/kg (rat)</td>
<td>&gt; 18,700 mg/kg (Rabbit)</td>
<td>&gt; 570 mg/m² (Rat) 1 h</td>
</tr>
</tbody>
</table>

Information on toxicological effects

Symptoms
No information available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation
No known hazard.

Serious eye damage/eye irritation
No known hazard.

Sensitization
Not a skin sensitizer.

Mutagenic Effects
Not classified as a mutagen by IARC.

Carcinogenicity
No ingredients are classified as carcinogenic to humans by IARC, OSHA, ACGIH, or NTP.

Reproductive Toxicity
No known hazard.

Teratogenic
No known hazard.

STOT - single exposure
No known hazard.

STOT - repeated exposure
No known hazard.

Aspiration hazard
No known hazard.

Numerical measures of toxicity-Product Information
Not determined

12. ECOLOGICAL INFORMATION
Ecotoxicity

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Toxicity to Algae</th>
<th>Toxicity to Fish</th>
<th>Microtox</th>
<th>Daphnia Magna (Water Flea)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glycerin 56-81-5</td>
<td>LC50 51 - 57 mL/L</td>
<td>Oncorhynchus mykiss 96 h</td>
<td>&gt;10 g/l</td>
<td>EC50 &gt;10,000 mg/l 24 h Daphnia magna</td>
</tr>
</tbody>
</table>

Persistence and degradability
Readily biodegradable.

Bioaccumulation/Accumulation
Not expected to be bioaccumulative.

Mobility
Will likely be mobile in the environment due to its water solubility.

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Log Pow</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glycerin 56-81-5</td>
<td>-1.76</td>
</tr>
</tbody>
</table>

Other Adverse Effects
None identified

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste Disposal Method
Dispose of in accordance with applicable regulations.

Contaminated Packaging
Dispose of in accordance with applicable regulations.

14. TRANSPORT INFORMATION

DOT
Not regulated

TDG
Not regulated

MEX
Not regulated

ICAO
Not regulated

IATA
Not regulated

IMDG / IMO
Not regulated

RID
Not regulated

ADR
Not regulated

ADN
Not regulated

15. REGULATORY INFORMATION

International Inventories

<table>
<thead>
<tr>
<th>Inventory</th>
<th>Complies</th>
</tr>
</thead>
<tbody>
<tr>
<td>TSCA</td>
<td></td>
</tr>
<tr>
<td>DSL</td>
<td></td>
</tr>
<tr>
<td>NDSL</td>
<td></td>
</tr>
<tr>
<td>EINECS</td>
<td></td>
</tr>
<tr>
<td>ELINCS</td>
<td></td>
</tr>
<tr>
<td>ENCS</td>
<td></td>
</tr>
<tr>
<td>IECSC</td>
<td></td>
</tr>
<tr>
<td>KECL</td>
<td></td>
</tr>
<tr>
<td>PICCS</td>
<td></td>
</tr>
<tr>
<td>AICS</td>
<td></td>
</tr>
</tbody>
</table>
SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories

Acute health hazard No
Chronic Health Hazard No
Fire hazard No
Sudden release of pressure hazard No
Reactive Hazard No

Clean Water Act
This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

CERCLA
This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

U.S. State Regulations

U.S. State Right-to-Know Regulations

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>New Jersey</th>
<th>Massachusetts</th>
<th>Pennsylvania</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glycerin 56-81-5</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

16. OTHER INFORMATION

NFPA
Health Hazard 0  Flammability 1  Instability 0  Physical and Chemical Hazards n/a

HMIS
Health Hazard 0  Flammability 1  Physical hazards 0  Personal Precautions B

Issuing Date 28-Apr-2015
Revision Date 20-Feb-2015
Revision Note
Reason for Revision
Update to company logo

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End of MSDS