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

Product identifier
Product Name: Diglyme
Product Code: SC-211330

Recommended use of the chemical and restrictions on use
For research use only. Not intended for diagnostic or therapeutic use.

2. HAZARDS IDENTIFICATION

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification
Reproductive toxicity: Category 1B
Flammable liquids: Category 3

Label elements
Signal word: Danger
Hazard statements:
- May be harmful if inhaled
- May damage fertility or the unborn child
- Flammable liquid and vapor

Symbols/Pictograms

Precautionary Statements - Prevention
Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Use personal protective equipment as required
Keep away from heat/sparks/open flames/hot surfaces. — No smoking
Keep container tightly closed
Ground/bond container and receiving equipment
Use only non-sparking tools
Take precautionary measures against static discharge

Precautionary Statements - Response
IF exposed or concerned: Get medical advice/attention
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
In case of fire: Use CO2, dry chemical, or foam for extinction

Precautionary Statements - Storage
Store locked up Store in a well-ventilated place. Keep cool

Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)
Hazards not otherwise classified (HNOC) Not applicable

Other Information

<table>
<thead>
<tr>
<th>NFPA</th>
<th>Health hazards</th>
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</thead>
<tbody>
<tr>
<td>Flammability</td>
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<td></td>
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<tr>
<td>Stability</td>
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<tr>
<td>Physical and chemical properties</td>
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<table>
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<tr>
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<th>Health hazards</th>
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<tr>
<td>Flammability</td>
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<td></td>
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<tr>
<td>Physical hazards</td>
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<td></td>
</tr>
<tr>
<td>Personal protection</td>
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<td></td>
</tr>
</tbody>
</table>

* = Chronic Health Hazard

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS No.</th>
<th>Weight-%</th>
<th>Oral LD50</th>
<th>Dermal LD50</th>
<th>Inhalation LC50</th>
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<tbody>
<tr>
<td>Diglyme</td>
<td>111-96-6</td>
<td>&gt;98</td>
<td>7500 mg/kg (Rat)</td>
<td>-</td>
<td>&gt;11000 mg/m³ (Rat) 7 h</td>
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</table>

4. FIRST AID MEASURES

First Aid Measures

**General advice**

Immediate medical attention is required. In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

**Eye contact**

Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Keep eye wide open while rinsing. Call a physician immediately.

**Skin Contact**

Wash off immediately with plenty of water.

**Inhalation**

Immediate medical attention is required Remove to fresh air If not breathing, give artificial respiration Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation

**Ingestion**

Do NOT induce vomiting. Call a physician or poison control center immediately. Never give anything by mouth to an unconscious person. Drink plenty of water.

**Self-protection of the first aider**

Remove all sources of ignition.

**Most important symptoms and effects, both acute and delayed**

**Symptoms**

No information available.

**Indication of any immediate medical attention and special treatment needed**

**Note to physicians**

Treat symptomatically.

5. FIRE-FIGHTING MEASURES

**Suitable Extinguishing Media**

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**Unsuitable Extinguishing Media**

No information available.

**Specific hazards arising from the chemical**

Specific hazards arising from the chemical flammable.

Hazardous combustion products Carbon oxides.

**Explosion data**

Sensitivity to Mechanical Impact No information available.
Sensitivity to Static Discharge
No information available.

**Protective equipment and precautions for firefighters**
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**
Remove all sources of ignition. Evacuate personnel to safe areas. Ensure adequate ventilation, especially in confined areas. Use personal protective equipment as required.

**Environmental precautions**
Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. See Section 12 for additional Ecological Information. Do not flush into surface water or sanitary sewer system.

**Methods and material for containment and cleaning up**

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Dam up. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Pick up and transfer to properly labeled containers. Soak up with inert absorbent material.

### 7. HANDLING AND STORAGE

**Precautions for safe handling**

**Advice on safe handling**
Ensure adequate ventilation, especially in confined areas. Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity). Take precautionary measures against static discharges. Use spark-proof tools and explosion-proof equipment. All equipment used when handling the product must be grounded. Noxious vapor/odor.

**Conditions for safe storage, including any incompatibilities**

**Storage Conditions**
Keep tightly closed in a dry and cool place. Keep in properly labeled containers. Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity). Store at room temperature.

**Incompatible materials**
None known based on information supplied.

### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Control parameters**

**Exposure Guidelines**
This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

**Appropriate engineering controls**

**Engineering Controls**
Ensure adequate ventilation, especially in confined areas

**Individual protection measures, such as personal protective equipment**

**Eye/face protection**
Tight sealing safety goggles.

**Skin and Body Protection**
Wear protective gloves and protective clothing.

**Respiratory protection**
If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved
respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

General Hygiene Considerations
When using do not eat, drink or smoke. Regular cleaning of equipment, work area and clothing is recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES

| Physical State | liquid |
| Appearance     | No information available |
| Odor           | No information available |
| Property       | Values               |
| pH             | No information available |
| Melting point/freezing point | -68 °C |
| Boiling point  | 162 °C               |
| Flash point    | 50 °C                |
| Liquid Density | No information available |
| Evaporation rate| No information available |
| Upper flammability limits | No information available |
| Lower flammability limit | No information available |
| Vapor pressure | No information available |
| Vapor density  | No information available |
| Specific gravity| No information available |
| Water solubility| No information available |
| Solubility in other solvents | No information available |
| Partition coefficient | No information available |
| Autoignition temperature | No information available |
| Decomposition temperature | No information available |
| Kinematic viscosity | No information available |
| Explosive properties | No information available |
| Oxidizing properties | No information available |

10. STABILITY AND REACTIVITY

Reactivity Not applicable
Chemical stability Stable under recommended storage conditions.
Possibility of Hazardous Reactions None under normal processing.
Hazardous polymerization No information available.
Conditions to avoid Heat, flames and sparks.
Incompatible materials Strong oxidizing agents.
Hazardous Decomposition Products Carbon oxides.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure
Inhalation No data available.
Eye contact No data available.
Skin Contact No data available.
Ingestion No data available.

Information on toxicological effects
Symptoms No information available.
Delayed and immediate effects as well as chronic effects from short and long-term exposure
Chronic Toxicity No information available.

Numerical measures of toxicity - Product Information
Unknown acute toxicity No information available
The following values are calculated based on chapter 3.1 of the GHS document
ATEmix (oral) 7500 mg/kg
ATEmix (inhalation-vapor) 11000 mg/l

12. ECOLOGICAL INFORMATION

Ecotoxicity May cause long lasting harmful effects to aquatic life

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Algae/aquatic plants</th>
<th>Fish</th>
<th>Toxicity to Microorganisms</th>
<th>Crustacea</th>
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</thead>
<tbody>
<tr>
<td>Diglyme 111-96-6</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>5868: 96 h Daphnia magna mg/L EC50</td>
</tr>
</tbody>
</table>

0% of the mixture consists of components(s) of unknown hazards to the aquatic environment.

Persistence and degradability No information available.
Bioaccumulation No information available.
Mobility No information available.

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Partition coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diglyme 111-96-6</td>
<td>-0.36</td>
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</table>

13. DISPOSAL CONSIDERATIONS

Disposal of wastes Disposal should be in accordance with applicable regional, national and local laws and regulations.
Contaminated packaging Do not reuse container.
Other Information Waste codes should be assigned by the user based on the application for which the product was used.
US EPA Waste Number D001

14. TRANSPORT INFORMATION

DOT
UN/ID no UN3271
Hazard Class 3
Packing Group III
Proper shipping name Ethers, n.o.s.
Description UN3271, Ethers, n.o.s., 3, III
Emergency Response Guide Number 127

IMDG
UN/ID no UN3271
Hazard Class 3
Packing Group III
Proper shipping name Ethers, n.o.s.
Description UN3271, Ethers, n.o.s. (Diglyme), 3, III, (50°C c.c.)
Special Provisions 223, 274
EmS-No F-E, S-D

IATA
UN/ID no UN3271
Hazard Class 3
Packing Group III
Proper shipping name Ethers, n.o.s.
Description UN3271, Ethers, n.o.s. (Diglyme), 3, III
ERG Code 3L

15. REGULATORY INFORMATION

International Inventories
All of the components in the product are on the following Inventory lists
TSCA (United States): Canada (DSL/NDSL) Europe (EINECS/ELINCS/NLP) Australia (AICS) South Korea (KECL): China (IECSC)
ENCS (Japan): Philippines (PICCS)

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>TSCA</th>
<th>DSL</th>
<th>NDSL</th>
<th>EINECS</th>
<th>ELINCS</th>
<th>ENCS</th>
<th>IECSC</th>
<th>KECL</th>
<th>PICCS</th>
<th>AICS</th>
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<tbody>
<tr>
<td>Diglyme</td>
<td>X</td>
<td>X</td>
<td>-</td>
<td>X</td>
<td>-</td>
<td>X</td>
<td>X</td>
<td>X</td>
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</tr>
</tbody>
</table>

X - Listed
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances

US Federal Regulations

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 Yes
Chronic Health Hazard Yes
Fire hazard Yes
Sudden release of pressure hazard No
Reactive hazard No

CWA (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).

US State Regulations

California Proposition 65
This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>New Jersey</th>
<th>Massachusetts</th>
<th>Pennsylvania</th>
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<tr>
<td>Diglyme 111-96-6</td>
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16. OTHER INFORMATION
Revision note
No information available

Disclaimer
The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet