Sulforaphane, 10mM

SECTION 1: IDENTIFICATION
1.1. Product Identifier
Product Form: Mixture
Product Name: Sulforaphane, 10mM
Product Code: 3470-096-02

1.2. Intended Use of the Product
No use is specified.

1.3. Name, Address, and Telephone of the Responsible Party
Company
Trevigen Inc.
8405 Helgerman Court
20877 Gaithersburg, MD 20877
T 1-800-TREVIGEN

1.4. Emergency Telephone Number
Emergency Number: 301-216-2800

SECTION 2: HAZARDS IDENTIFICATION
2.1. Classification of the Substance or Mixture
Classification (GHS-US)
Flam. Liq. 4 H227
Full text of H-phrases: see section 16

2.2. Label Elements
GHS-US Labeling
Signal Word (GHS-US) : Warning
Hazard Statements (GHS-US) : H227 - Combustible liquid.
Precautionary Statements (GHS-US) : P210 - Keep away from extremely high or low temperatures, ignition sources, and incompatible materials. - No smoking.
P280 - Wear protective gloves, protective clothing, and eye protection.
P370+P378 - In case of fire: Use appropriate media (see section 5) to extinguish.
P403+P235 - Store in a well-ventilated place. Keep cool.
P501 - Dispose of contents/container in accordance with local, regional, national, territorial, provincial, and international regulations.

2.3. Other Hazards
No additional information available

2.4. Unknown Acute Toxicity (GHS-US) No data available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS
3.1. Substances
Not applicable

3.2. Mixture

<table>
<thead>
<tr>
<th>Name</th>
<th>Product Identifier</th>
<th>% (w/w)</th>
<th>Classification (GHS-US)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimethyl sulfoxide</td>
<td>(CAS No) 67-68-5</td>
<td>99.8</td>
<td>Flam. Liq. 4, H227</td>
</tr>
</tbody>
</table>

Full text of H-phrases: see section 16

SECTION 4: FIRST AID MEASURES
4.1. Description of First Aid Measures
General: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label if possible).
Inhalation: Remove to fresh air and keep at rest in a position comfortable for breathing. Obtain medical attention if breathing difficulty persists.
Skin Contact: Rinse immediately with plenty of water. Obtain medical attention if irritation develops or persists.
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**Eye Contact:** Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention.

**Ingestion:** Do not induce vomiting. Rinse mouth. Seek medical attention if a large amount is swallowed.

4.2. **Most Important Symptoms and Effects Both Acute and Delayed**

**General:** Not expected to present a significant hazard under anticipated conditions of normal use.

**Inhalation:** May cause respiratory irritation.

**Skin Contact:** May cause skin irritation.

**Eye Contact:** May cause eye irritation.

**Ingestion:** Ingestion is likely to be harmful or have adverse effects.

**Chronic Symptoms:** None expected under normal conditions of use.

4.3. **Indication of Any Immediate Medical Attention and Special Treatment Needed**
If you feel unwell, seek medical advice (show the label where possible).

**SECTION 5: FIRE-FIGHTING MEASURES**

5.1. **Extinguishing Media**

**Suitable Extinguishing Media:** Water spray, fog, carbon dioxide (CO₂), alcohol-resistant foam, or dry chemical.

**Unsuitable Extinguishing Media:** Do not use a heavy water stream. Use of heavy stream of water may spread fire.

5.2. **Special Hazards Arising From the Substance or Mixture**

**Fire Hazard:** Combustible liquid.

**Explosion Hazard:** Product is not explosive.

**Reactivity:** Hazardous reactions will not occur under normal conditions.

5.3. **Advice for Firefighters**

**Precautionary Measures Fire:** Exercise caution when fighting any chemical fire.

**Firefighting Instructions:** Use water spray or fog for cooling exposed containers.

**Protection During Firefighting:** Do not enter fire area without proper protective equipment, including respiratory protection.


**Other Information:** Will decompose above 150 °C (> 300 °F) releasing formaldehyde vapors.

**Reference to Other Sections**
Refer to section 9 for flammability properties.

**SECTION 6: ACCIDENTAL RELEASE MEASURES**

6.1. **Personal Precautions, Protective Equipment and Emergency Procedures**

**General Measures:** Avoid all contact with skin, eyes, or clothing. Avoid breathing (vapor, mist, spray).

6.1.1. **For Non-Emergency Personnel**

**Protective Equipment:** Use appropriate personal protection equipment (PPE).

**Emergency Procedures:** Evacuate unnecessary personnel.

6.1.2. **For Emergency Personnel**

**Protective Equipment:** Equip cleanup crew with proper protection.

**Emergency Procedures:** Upon arrival at the scene, a first responder is expected to recognize the presence of dangerous goods, protect oneself and the public, secure the area, and call for the assistance of trained personnel as soon as conditions permit.

6.2. **Environmental Precautions**

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. **Methods and Material for Containment and Cleaning Up**

**For Containment:** Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams.

**Methods for Cleaning Up:** Clean up spills immediately and dispose of waste safely. Spills should be contained with mechanical barriers. Transfer spilled material to a suitable container for disposal. Use only non-sparking tools. Contact competent authorities after a spill.

6.4. **Reference to Other Sections**
See Heading 8. Exposure controls and personal protection. For further information refer to section 13.

**SECTION 7: HANDLING AND STORAGE**

7.1. **Precautions for Safe Handling**

**Additional Hazards When Processed:** Empty containers may contain combustible product residue.
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Hygiene Measures: Handle in accordance with good industrial hygiene and safety procedures. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

7.2 Conditions for Safe Storage, Including Any Incompatibilities

Technical Measures: Ensure adequate ventilation. Proper grounding procedures to avoid static electricity should be followed. Comply with applicable regulations.

Storage Conditions: Store in a dry, cool and well-ventilated place. Keep container closed when not in use. Keep/Store away from direct sunlight, extremely high or low temperatures and incompatible materials.


7.3 Specific End Use(s)

No use is specified.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control Parameters

For substances listed in section 3 that are not listed here, there are no established Exposure limits from the manufacturer, supplier, importer, or the appropriate advisory agency including: ACGIH (TLV), NIOSH (REL), OSHA (PEL), Canadian provincial governments, or the Mexican government.

8.2 Exposure Controls

Appropriate Engineering Controls: Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapor or mists below the applicable workplace exposure limits. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Take precautionary measures against static discharges. Ensure all national/local regulations are observed.


Materials for Protective Clothing: Chemically resistant materials and fabrics.

Hand Protection: Wear chemically resistant protective gloves.

Eye Protection: Chemical safety goggles.

Skin and Body Protection: Wear suitable protective clothing.

Respiratory Protection: If exposure limits are exceeded or irritation is experienced, approved respiratory protection should be worn.

Environmental Exposure Controls: Do not allow the product to be released into the environment.

Consumer Exposure Controls: Do not eat, drink or smoke during use.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on Basic Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical State</td>
<td>Liquid</td>
</tr>
<tr>
<td>Appearance</td>
<td>Not available</td>
</tr>
<tr>
<td>Odor</td>
<td>Not available</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>Not available</td>
</tr>
<tr>
<td>pH</td>
<td>Not available</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>Not available</td>
</tr>
<tr>
<td>Melting Point</td>
<td>Not available</td>
</tr>
<tr>
<td>Freezing Point</td>
<td>Not available</td>
</tr>
<tr>
<td>Boiling Point</td>
<td>Not available</td>
</tr>
<tr>
<td>Flash Point</td>
<td>Not available</td>
</tr>
<tr>
<td>Auto-ignition Temperature</td>
<td>Not available</td>
</tr>
<tr>
<td>Decomposition Temperature</td>
<td>Not available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not available</td>
</tr>
<tr>
<td>Lower Flammable Limit</td>
<td>Not available</td>
</tr>
<tr>
<td>Upper Flammable Limit</td>
<td>Not available</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>Not available</td>
</tr>
</tbody>
</table>
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Relative Vapor Density at 20 °C: Not available
Relative Density: Not available
Specific Gravity: Not available
Solubility: Not available
Partition Coefficient: N-Octanol/Water: Not available
Viscosity: Not available

Explosion Data – Sensitivity to Mechanical Impact: Not expected to present an explosion hazard due to mechanical impact
Explosion Data – Sensitivity to Static Discharge: Static discharge could act as an ignition source

SECTION 10: STABILITY AND REACTIVITY
10.1. Reactivity: Hazardous reactions will not occur under normal conditions.
10.2. Chemical Stability: Stable under recommended handling and storage conditions (see section 7).
10.3. Possibility of Hazardous Reactions: Hazardous polymerization will not occur.
10.5. Incompatible Materials: Strong acids, strong bases, strong oxidizers.
10.6. Hazardous Decomposition Products: None known.

SECTION 11: TOXICOLOGICAL INFORMATION
11.1. Information on Toxicological Effects - Product
Acute Toxicity: Not classified
LD50 and LC50 Data: Not available
Skin Corrosion/Irritation: Not classified
Serious Eye Damage/Irritation: Not classified
Respiratory or Skin Sensitization: Not classified
Germ Cell Mutagenicity: Not classified
Teratogenicity: Not classified
Carcinogenicity: Not classified
Specific Target Organ Toxicity (Repeated Exposure): Not classified
Reproductive Toxicity: Not classified
Specific Target Organ Toxicity (Single Exposure): Not classified
Aspiration Hazard: Not classified
Symptoms/Injuries After Inhalation: May cause respiratory irritation
Symptoms/Injuries After Skin Contact: May cause skin irritation
Symptoms/Injuries After Eye Contact: May cause eye irritation
Symptoms/Injuries After Ingestion: Ingestion is likely to be harmful or have adverse effects
Chronic Symptoms: None expected under normal conditions of use

11.2. Information on Toxicological Effects - Ingredient(s)
LD50 and LC50 Data:

<table>
<thead>
<tr>
<th>Substance</th>
<th>LD50 Oral Rat</th>
<th>LD50 Dermal Rat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimethyl sulfoxide (67-68-5)</td>
<td>&gt; 20000 mg/kg</td>
<td>= 40000 mg/kg</td>
</tr>
</tbody>
</table>

SECTION 12: ECOLOGICAL INFORMATION
12.1. Toxicity: Not classified

<table>
<thead>
<tr>
<th>Substance</th>
<th>LC50 Fish 1</th>
<th>LC 50 Fish 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimethyl sulfoxide (67-68-5)</td>
<td>34 g/l (Exposure time: 96 h - Species: Pimephales promelas)</td>
<td>33 - 37 g/l (Exposure time: 96 h - Species: Oncorhynchus mykiss [static])</td>
</tr>
</tbody>
</table>

12.2. Persistence and Degradability: Not available
12.3. Bioaccumulative Potential

<table>
<thead>
<tr>
<th>Substance</th>
<th>Log Pow</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimethyl sulfoxide (67-68-5)</td>
<td>-2.03</td>
</tr>
</tbody>
</table>

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12.4. Mobility in Soil  Not available
12.5. Other Adverse Effects  Not available

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods
Waste Disposal Recommendations: Dispose of waste material in accordance with all local, regional, national, provincial, territorial and international regulations.

Additional Information: Container may remain hazardous when empty. Continue to observe all precautions.

SECTION 14: TRANSPORT INFORMATION

14.1. In Accordance with DOT
Proper Shipping Name: COMBUSTIBLE LIQUID, N.O.S. (Contains Dimethyl sulfoxide)
Identification Number: NA1993
Packing Group: III
ERG Number: 128

14.2. In Accordance with IMDG  Not regulated for transport
14.3. In Accordance with IATA  Not regulated for transport
14.4. In Accordance with TDG  Not regulated for transport

SECTION 15: REGULATORY INFORMATION

15.1. US Federal Regulations
Sulforaphane, 10mM
SARA Section 311/312 Hazard Classes  Fire hazard
Dimethyl sulfoxide (67-68-5)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
SARA Section 311/312 Hazard Classes  Fire hazard

15.2. US State Regulations
Dimethyl sulfoxide (67-68-5)
U.S. - New Jersey - Right to Know Hazardous Substance List

15.3. Canadian Regulations
Sulforaphane, 10mM
WHMIS Classification  Class B Division 3 - Combustible Liquid

Dimethyl sulfoxide (67-68-5)
Listed on the Canadian DSL (Domestic Substances List)
Listed on the Canadian IDL (Ingredient Disclosure List)
IDL Concentration 1 %
WHMIS Classification  Class B Division 3 - Combustible Liquid

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all of the information required by CPR.

SECTION 16: OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

Revision Date: 05/13/2015
Other Information: This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200.

GHS Full Text Phrases:

Flam. Liq. 4  Flammable liquids Category 4
H227  Combustible liquid
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Party Responsible for the Preparation of This Document
Trevigen INC. 8405 Helgerman Court Gaithersburg, MD 20877 T: 301-216-2800

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

North America GHS US 2012 & WHMIS 2