SECTION 1: Identification of the substance/mixture and of the company/undertaking

<table>
<thead>
<tr>
<th>1.1. Product identifier</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product form</td>
</tr>
<tr>
<td>Physical state</td>
</tr>
<tr>
<td>Substance name</td>
</tr>
<tr>
<td>Product code</td>
</tr>
<tr>
<td>Formula</td>
</tr>
<tr>
<td>Synonyms</td>
</tr>
<tr>
<td>Chemical family</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>1.2. Relevant identified uses of the substance or mixture and uses advised against</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use of the substance/mixture</td>
</tr>
<tr>
<td>For research and industrial use only</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>1.3. Details of the supplier of the safety data sheet</th>
</tr>
</thead>
<tbody>
<tr>
<td>GELEST, INC.</td>
</tr>
<tr>
<td>11 East Steel Road</td>
</tr>
<tr>
<td>Morrisville, PA 19067</td>
</tr>
<tr>
<td>USA</td>
</tr>
<tr>
<td>T 215-547-1015 - F 215-547-2484 - (M-F): 8:00 AM - 5:30 PM EST</td>
</tr>
<tr>
<td><a href="mailto:info@gelest.com">info@gelest.com</a> - <a href="http://www.gelest.com">www.gelest.com</a></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>1.4. Emergency telephone number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emergency number</td>
</tr>
</tbody>
</table>

SECTION 2: Hazards identification

<table>
<thead>
<tr>
<th>2.1. Classification of the substance or mixture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classification (GHS-US)</td>
</tr>
<tr>
<td>Flam. Liq. 3 H226</td>
</tr>
<tr>
<td>Eye Irrit. 2A H319</td>
</tr>
<tr>
<td>Full text of H-phrases: see section 16</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2.2. Label elements</th>
</tr>
</thead>
<tbody>
<tr>
<td>GHS-US labelling</td>
</tr>
<tr>
<td>Hazard pictograms (GHS-US)</td>
</tr>
<tr>
<td>GHS02</td>
</tr>
<tr>
<td>GHS07</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2.3. Other hazards</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other hazards not contributing to the classification</td>
</tr>
</tbody>
</table>
1,1,3,3-TETRAMETHYL-1,3-DIETHOXYDISILOXANE
Safety Data Sheet

2.4. Unknown acute toxicity (GHS-US)
No data available

SECTION 3: Composition/information on ingredients

3.1. Substance
Substance type : Mono-constituent
Name : 1,1,3,3-TETRAMETHYL-1,3-DIETHOXYDISILOXANE
CAS No : 18420-09-2
EC no : 242-298-7

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>Classification (GHS-US)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,1,3,3-Tetramethyl-1,3-diethoxydisiloxane</td>
<td>(CAS No) 18420-09-2</td>
<td>&gt; 95</td>
<td>Flam. Liq. 3, H226 Eye Irrit. 2A, H319</td>
</tr>
<tr>
<td>Ethanol</td>
<td>(CAS No) 64-17-5</td>
<td></td>
<td>Flam. Liq. 2, H225 Carc. 1A, H350 STOT SE 3, H335</td>
</tr>
</tbody>
</table>

3.2. Mixture
Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures
First-aid measures general : Remove contaminated clothing and shoes. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). If possible show this sheet; if not available show packaging or label.
First-aid measures after inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If you feel unwell, seek medical advice.
First-aid measures after skin contact : Wash with plenty of soap and water.
First-aid measures after eye contact : Immediately flush eyes thoroughly with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical advice/attention.
First-aid measures after ingestion : Never give anything by mouth to an unconscious person. Get medical advice/attention.

4.2. Most important symptoms and effects, both acute and delayed
Symptoms/injuries after skin contact : May cause skin irritation.
Symptoms/injuries after eye contact : Causes serious eye irritation.
Symptoms/injuries after ingestion : No information available.
Chronic symptoms : On contact with water this compound liberates ethanol which is known to have a chronic effect on the central nervous system.

4.3. Indication of any immediate medical attention and special treatment needed
No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

5.2. Special hazards arising from the substance or mixture
Fire hazard : Flammable liquid and vapor. Irritating fumes and organic acid vapors may develop when material is exposed to elevated temperatures or open flame.

5.3. Advice for firefighters
Firefighting instructions : Exercise caution when fighting any chemical fire. Use water spray to cool exposed surfaces.
Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection. Avoid all eye and skin contact and do not breathe vapor and mist.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
General measures : Eliminate ignition sources. Use special care to avoid static electric charges.

6.1.1. For non-emergency personnel
Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders
Protective equipment : Equip cleanup crew with proper protection.
1,1,3,3-TETRAMETHYL-1,3-DIETHOXYDISILOXANE
Safety Data Sheet

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
Methods for cleaning up: Clean up any spills as soon as possible, using an absorbent material to collect it. Sweep or shovel spills into appropriate container for disposal. Use only non-sparking tools.

6.4. Reference to other sections
See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling
Additional hazards when processed: Handle empty containers with care because residual vapors are flammable.
Precautions for safe handling: Avoid all eye and skin contact and do not breathe vapor and mist. Provide good ventilation in process area to prevent accumulation of vapors. Take precautionary measures against static discharge. Containers and transfer lines require grounding during use. Use only non-sparking tools.
Hygiene measures: Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage, including any incompatibilities
Technical measures: Ground/bond container and receiving equipment.
Storage conditions: Keep container tightly closed.
Storage area: Store in a well-ventilated place. Store away from heat.

7.3. Specific end use(s)
No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

<table>
<thead>
<tr>
<th>Ethanol (64-17-5)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>USA ACGIH AGIHE STEL (ppm)</td>
<td>1000 ppm</td>
</tr>
<tr>
<td>USA NIOSH NIOSH REL (TWA) (mg/m³)</td>
<td>1900 mg/m³</td>
</tr>
<tr>
<td>USA NIOSH NIOSH REL (TWA) (ppm)</td>
<td>1000 ppm</td>
</tr>
<tr>
<td>USA OSHA OSHA REL (TWA) (mg/m³)</td>
<td>1900 mg/m³</td>
</tr>
<tr>
<td>USA OSHA OSHA REL (TWA) (ppm)</td>
<td>1000 ppm</td>
</tr>
<tr>
<td>USA IDLH US IDLH (ppm)</td>
<td>3300 ppm (10% LEL)</td>
</tr>
</tbody>
</table>

8.2. Exposure controls
Appropriate engineering controls: Provide local exhaust or general room ventilation.
Personal protective equipment: Avoid all unnecessary exposure. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.
Hand protection: Neoprene or nitrile rubber gloves.
Eye protection: Chemical goggles. Contact lenses should not be worn.
Skin and body protection: Wear suitable protective clothing.
Respiratory protection: Where exposure through inhalation may occur from use, respiratory protection equipment is recommended. NIOSH-certified organic vapor (black cartridge) respirator.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties
Physical state: Liquid
Appearance: Clear liquid.
Molecular mass: 222.43 g/mol
Color: Straw.
Odor: Mild.
Odor threshold: No data available
Refractive index: 1.388
pH: No data available
Relative evaporation rate (butyl acetate=1): No data available
Melting point: -134 °C
Freezing point: -134 °C
1,1,3,3-TETRAMETHYL-1,3-DIETHOXYSILOXANE
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Boiling point: 161 °C
Flash point: 43 °C
Auto-ignition temperature: No data available
Decomposition temperature: No data available
Flammability (solid, gas): Flammable liquid and vapor
Vapor pressure: No data available
Relative vapor density at 20 °C: > 1
Relative density: 0.8788
Solubility: Insoluble in water. Reacts with water.
Log Pow: No data available
Log Kow: No data available
Viscosity, kinematic: 1 cSt
Viscosity, dynamic: No data available
Explosive properties: No data available
Oxidizing properties: No data available
Explosive limits: No data available

9.2. Other information
No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity
No additional information available

10.2. Chemical stability
Stable in sealed containers.

10.3. Possibility of hazardous reactions
Reacts with water and moisture in air, liberating ethanol.

10.4. Conditions to avoid
Heat. Open flame. Sparks.

10.5. Incompatible materials
Moisture. Water.

10.6. Hazardous decomposition products
Ethanol. Organic acid vapors.

SECTION 11: Toxicological information

11.1. Information on toxicological effects
Acute toxicity: Not classified

Ethanol (64-17-5)
LC50 inhalation rat (mg/l): 124.7 mg/l/4h
Skin corrosion/irritation: Not classified
Serious eye damage/irritation: Causes serious eye irritation.
Respiratory or skin sensitization: Not classified
Germ cell mutagenicity: Not classified
Carcinogenicity: Not classified.

Ethanol (64-17-5)
IARC group: 1 - Carcinogenic to humans
Reproductive toxicity: Not classified
Specific target organ toxicity (single exposure): Not classified
Specific target organ toxicity (repeated exposure): Not classified
Aspiration hazard: Not classified
Symptoms/injuries after skin contact: May cause skin irritation.
Symptoms/injuries after eye contact: Causes serious eye irritation.
Symptoms/injuries after ingestion: No information available.
1,1,3,3-TETRAMETHYL-1,3-DIETHOXYDISILOXANE
Safety Data Sheet

Chronic symptoms: On contact with water this compound liberates ethanol which is known to have a chronic effect on the central nervous system.

SECTION 12: Ecological information

12.1. Toxicity

| Ethanol (64-17-5) |  
|-------------------|-------------------|
| LC50 fish 1       | 12.0 - 16.0 ml/l (Exposure time: 96 h - Species: Oncorhynchus mykiss [static]) |
| EC50 Daphnia 1    | 9268 - 14221 mg/l (Exposure time: 48 h - Species: Daphnia magna) |
| LC50 fish 2       | > 100 mg/l (Exposure time: 96 h - Species: Pimephales promelas [static]) |
| EC50 Daphnia 2    | 2 mg/l (Exposure time: 48 h - Species: Daphnia magna [static]) |

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

Ethanol (64-17-5)

| Log Pow | -0.32 |

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Other adverse effects: This substance may be hazardous to the environment.
Effect on ozone layer: No additional information available
Effect on the global warming: No known ecological damage caused by this product.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations: May be incinerated. Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to licensed waste disposal facility.
Additional information: Handle empty containers with care because residual vapors are flammable.
Ecology / waste materials: Avoid release to the environment.

SECTION 14: Transport information

14.1. UN number

UN-No.(DOT) : 1993
DOT NA no. : UN1993

14.2. UN proper shipping name

Proper Shipping Name (DOT) : Flammable liquids, n.o.s.
(1,1,3,3-TETRAMETHYL-1,3-DIETHOXYDISILOXANE)
Department of Transportation (DOT) Hazard Classes : 3 - Class 3 - Flammable and combustible liquid 49 CFR 173.120
Hazard labels (DOT) : 3 - Flammable liquid

DOT Symbols : G - Identifies PSN requiring a technical name
Packing group (DOT) : III - Minor Danger
DOT Packaging Exceptions (49 CFR 173.xxx) : 150
DOT Packaging Non Bulk (49 CFR 173.xxx) : 203
DOT Packaging Bulk (49 CFR 173.xxx) : 242

14.3. Additional information

Other information: No supplementary information available.

Transport by sea

DOT Vessel Stowage Location : A - The material may be stowed “on deck” or “under deck” on a cargo vessel and on a passenger vessel.
1,1,3,3-TETRAMETHYL-1,3-DIETHOXYDISILOXANE
Safety Data Sheet

Air transport
DOT Quantity Limitations Passenger aircraft/rail : 60 L (49 CFR 173.27)
DOT Quantity Limitations Cargo aircraft only (49 : 220 L CFR 175.75)

SECTION 15: Regulatory information

15.1. US Federal regulations

**1,1,3,3-Tetramethyl-1,3-diethoxydisiloxane (18420-09-2)**
Listed on the United States TSCA (Toxic Substances Control Act) inventory

**Ethanol (64-17-5)**
Listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations

**1,1,3,3-Tetramethyl-1,3-diethoxydisiloxane (18420-09-2)**
Listed on the Canadian NDSL (Non-Domestic Substances List)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory

**Ethanol (64-17-5)**
Listed on IARC (International Agency for Research on Cancer)
Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on the Canadian DSL (Domestic Sustances List)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on the Korean ENCS (Existing & New Chemical Substances) inventory
Listed on the United States TSCA (Toxic Substances Control Act) inventory
Listed on the United States TSCA (Toxic Substances Control Act) inventory

15.3. US State regulations

**1,1,3,3-TETRAMETHYL-1,3-DIETHOXYDISILOXANE (18420-09-2)**

<table>
<thead>
<tr>
<th>U.S. - California - Proposition 65 - Carcinogens List</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S. - California - Proposition 65 - Developmental Toxicity</td>
<td>No</td>
</tr>
<tr>
<td>U.S. - California - Proposition 65 - Reproductive Toxicity - Female</td>
<td>No</td>
</tr>
<tr>
<td>U.S. - California - Proposition 65 - Reproductive Toxicity - Male</td>
<td>No</td>
</tr>
</tbody>
</table>

**Ethanol (64-17-5)**

<table>
<thead>
<tr>
<th>U.S. - California - Proposition 65 - Carcinogens List</th>
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<th>U.S. - California - Proposition 65 - Reproductive Toxicity - Female</th>
<th>U.S. - California - Proposition 65 - Reproductive Toxicity - Male</th>
<th>No significance risk level (NSRL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

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<th>No significance risk level (NSRL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

**Ethanol (64-17-5)**

|---------------------------------------------------------------|-------------------------------------------------------------|--------------------------------------------------------------------------------------|----------------------------------------------------------------------------|--------------------------------------------------|

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1,1,3,3-TETRAMETHYL-1,3-DIETHOXYDISILOXANE
Safety Data Sheet

SECTION 16: Other information

Abbreviations and acronyms

| Abbreviations: ND: Not Determined, No Data; NA: Not Applicable; LD: Lethal Dose; LC: Lethal Concentration; ATE: Acute Toxicity Estimates; H: hour; °: °C unless otherwise stated; mm: millimeters Hg, torr; PEL: permissible exposure level; TWA: time weighted average; TLV: threshold limit value; TG: Test Guideline; NIOSH: National Institute for Occupational Safety and Health; IARC: International Agency for Research on Cancer; NTP: National Toxicology Program; HMIS: Hazardous Material Information System; CAS No.: Chemical Abstract Service Registration Number; EC No.: European Commission Registration Number; EC Index No.: European Commission Index Number; OECD: The Organisation for Economic Co-operation and Development. |

<table>
<thead>
<tr>
<th>Carcinogenicity Category 1A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specific target organ toxicity (single exposure) Category 3</td>
</tr>
<tr>
<td>Highly flammable liquid and vapor</td>
</tr>
<tr>
<td>Flammable liquid and vapor</td>
</tr>
<tr>
<td>Causes serious eye irritation</td>
</tr>
<tr>
<td>May cause respiratory irritation</td>
</tr>
<tr>
<td>May cause cancer</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Carc. 1A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eye Irrit. 2A</td>
</tr>
<tr>
<td>Flam. Liq. 2</td>
</tr>
<tr>
<td>Flam. Liq. 3</td>
</tr>
<tr>
<td>STOT SE 3</td>
</tr>
</tbody>
</table>

Full text of H-phrases:
- Carc. 1A: Carcinogenicity Category 1A
- Eye Irrit. 2A: Serious eye damage/eye irritation Category 2A
- Flam. Liq. 2: Flammable liquids Category 2
- Flam. Liq. 3: Flammable liquids Category 3
- STOT SE 3: Specific target organ toxicity (single exposure) Category 3
- H225: Highly flammable liquid and vapor
- H226: Flammable liquid and vapor
- H319: Causes serious eye irritation
- H335: May cause respiratory irritation
- H350: May cause cancer

HMIS III Rating

<table>
<thead>
<tr>
<th>Health</th>
<th>Flammability</th>
<th>Physical</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 Moderate Hazard - Temporary or minor injury may occur</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 Moderate Hazard</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 Slight Hazard</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Prepared by safety and environmental affairs.

Date of issue: 01/09/2015          Version: 1.0

SDS US (GHS HazCom 2012) - Custom

According to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

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