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

1.1. Product identifier

Product form: Mixture
Physical state: Liquid
Product name: Gelest® UtenSil™ Wetting Agent W1
Product code: PP1-USW1
Formula: C3H9O3Si(C2H4O)6-9CH3
Synonyms: TRIMETHOXYSILYLPROPYPOLYETHYLENEOXIDE METHYL ETHER; METHOXY(POLYETHYLENEOXY)PROPYLTRIMETHOXYSILANE 4-8% in toluene
Chemical family: ORGANOMETHOXYSILANE

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture: Chemical intermediate
For research and industrial use only

1.3. Details of the supplier of the safety data sheet

GELEST, INC.
11 East Steel Road
Morrisville, PA 19067
USA
T 215-547-1015  F 215-547-2484  (M-F): 8:00 AM - 5:30 PM EST
info@gelest.com  www.gelest.com

1.4. Emergency telephone number

Emergency number: CHEMTREC: 1-800-424-9300 (USA); +1 703-527-3887 (International)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GHS-US classification
Flam. Liq. 2  H225
Skin Irrit. 2  H315
Eye Irrit. 2A  H319
Repr. 2  H361
STOT SE 3  H336
STOT RE 2  H373
Aquatic Acute 3  H402

Full text of H statements: see section 16

2.2. Label elements

GHS-US labeling
Hazard pictograms (GHS-US):

<table>
<thead>
<tr>
<th>Pictogram</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>GHS02</td>
<td>flame</td>
</tr>
<tr>
<td>GHS07</td>
<td>exclamation mark</td>
</tr>
<tr>
<td>GHS08</td>
<td>person</td>
</tr>
</tbody>
</table>

Signal word (GHS-US): Danger
Hazard statements (GHS-US):
H225 - Highly flammable liquid and vapor
H315 - Causes skin irritation
H319 - Causes serious eye irritation
H336 - May cause drowsiness or dizziness
H361 - Suspected of damaging fertility or the unborn child
H373 - May cause damage to organs through prolonged or repeated exposure
H402 - Harmful to aquatic life

Precautionary statements (GHS-US):
P201 - Obtain special instructions before use
P202 - Do not handle until all safety precautions have been read and understood
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P308+P313 - If exposed or concerned: Get medical advice/attention
P210 - Keep away from heat, open flames, sparks. - No smoking
P240 - Ground/bond container and receiving equipment
P241 - Use explosion-proof electrical equipment
P242 - Use only non-sparking tools
P243 - Take precautionary measures against static discharge
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. Substance
Not applicable

3.2. Mixture

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>GHS-US classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toluene</td>
<td>(CAS No) 108-88-3</td>
<td>92 - 96</td>
<td>Skin Irrit. 2, H315&lt;br&gt;Eye Irrit. 2A, H319&lt;br&gt;Repr. 2, H361&lt;br&gt;STOT SE 3, H336&lt;br&gt;STOT RE 2, H373&lt;br&gt;Asp. Tox. 1, H304</td>
</tr>
<tr>
<td>Methoxy(polyethyleneoxy)propyltrimethoxysilane</td>
<td>(CAS No) 65994-07-2</td>
<td>4 - 8</td>
<td>Eye Irrit. 2A, H319</td>
</tr>
</tbody>
</table>

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. Get medical advice/attention.

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 immediate medical advice/attention.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries: Suspected of damaging fertility or the unborn child. May cause damage to organs through prolonged or repeated exposure.

Symptoms/injuries after inhalation: May cause drowsiness or dizziness. May cause respiratory irritation. Toluene is moderately toxic by inhalation. Human systemic effects include CNS recording changes, hallucinations, distorted perceptions.

Symptoms/injuries after skin contact: Causes skin irritation.

Symptoms/injuries after eye contact: Causes serious eye irritation.

Symptoms/injuries after ingestion: May be harmful if swallowed. Oral toxicity is associated with toluene which causes psychophysiological and bone marrow changes nausea, vomiting, headache, visual effects including blindness.

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

SECTION 5: Firefighting measures

5.1. Extinguishing media


Unsuitable extinguishing media: Do not use straight streams.
5.2. Special hazards arising from the substance or mixture

Fire hazard: Highly flammable liquid and vapor. Irritating fumes and organic acid vapors may develop when material is exposed to elevated temperatures or open flame.

Explosion hazard: May form flammable/explosive vapor-air mixture.

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 every possible source of ignition. Use special care to avoid static electric charges.

6.1.1. For non-emergency personnel

Protective equipment: Wear protective equipment as described in Section 8.

Emergency procedures: Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment: Do not attempt to take action without suitable protective equipment. Equip cleanup crew with proper protection. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters. Avoid release to the environment.

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 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. Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

Precautions for safe handling: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid all eye and skin contact and do not breathe vapor and mist. Ground/bond container and receiving equipment. Provide good ventilation in process area to prevent accumulation of vapors. Use only outdoors or in a well-ventilated area. Use only non-sparking tools.

Hygiene measures: Wash contaminated clothing before reuse. 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: Proper grounding procedures to avoid static electricity should be followed. Use explosion-proof electrical equipment.

Storage conditions: Keep container tightly closed. Keep in a cool place. Store locked up.


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>Chemical</th>
<th>ACGIH TWA (ppm)</th>
<th>NIOSH REL (TWA) (mg/m³)</th>
<th>NIOSH REL (STEL) (mg/m³)</th>
<th>NIOSH REL (STEL) (ppm)</th>
<th>OSHA PEL (TWA) (ppm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toluene</td>
<td>20 ppm</td>
<td>375 mg/m³</td>
<td>560 mg/m³</td>
<td>150 ppm</td>
<td>200 ppm</td>
</tr>
</tbody>
</table>

USA ACGIH
USA NIOSH
USA NIOSH
USA NIOSH
USA NIOSH
USA OSHA

05/06/2016 EN (English US) SDS ID: PP1-USW1
Gelest® UtenSil™ Wetting Agent W1
Safety Data Sheet

### 8.2. Exposure controls

<table>
<thead>
<tr>
<th>Appropriate engineering controls</th>
<th>Provide local exhaust or general room ventilation.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal protective equipment</td>
<td>Avoid all unnecessary exposure. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.</td>
</tr>
</tbody>
</table>

### 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

<table>
<thead>
<tr>
<th>Physical state</th>
<th>Liquid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Liquid.</td>
</tr>
<tr>
<td>Molecular mass</td>
<td>(mixture)</td>
</tr>
<tr>
<td>Color</td>
<td>No data available</td>
</tr>
<tr>
<td>Odor</td>
<td>No data available</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>Refractive index</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative evaporation rate (butyl acetate=1)</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting point</td>
<td>&lt; -60 °C</td>
</tr>
<tr>
<td>Freezing point</td>
<td>No data available</td>
</tr>
<tr>
<td>Boiling point</td>
<td>111 °C - initial, toluene</td>
</tr>
<tr>
<td>Flash point</td>
<td>4 °C</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>536</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Highly flammable liquid and vapor</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>54 mm Hg @ 20°C (toluene)</td>
</tr>
<tr>
<td>Relative vapor density at 20 °C</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative density</td>
<td>1.01</td>
</tr>
<tr>
<td>VOC content</td>
<td>&gt; 75 °C</td>
</tr>
<tr>
<td>Solubility</td>
<td>Insoluble in water.</td>
</tr>
<tr>
<td>Log Pow</td>
<td>No data available</td>
</tr>
<tr>
<td>Log Kow</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity, kinematic</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity, dynamic</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosion limits</td>
<td>1.27 - 7 vol % (lower; upper; toluene)</td>
</tr>
</tbody>
</table>

#### 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 methanol.

#### 10.4. Conditions to avoid

Heat. Open flame. Sparks.
10.5. Incompatible materials
Moisture. Water.

10.6. Hazardous decomposition products
Methanol. Organic acid vapors.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity: Not classified

<table>
<thead>
<tr>
<th>Toluene (108-88-3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 oral rat</td>
</tr>
<tr>
<td>LD50 dermal rabbit</td>
</tr>
<tr>
<td>LC50 inhalation rat (mg/l)</td>
</tr>
</tbody>
</table>

Skin corrosion/irritation: Causes skin irritation.

Serious eye damage/irritation: Causes serious eye irritation.

Respiratory or skin sensitization: Not classified

Germ cell mutagenicity: Not classified

Carcinogenicity: Not classified

Germ cell mutagenicity: Not classified

Reproductive toxicity: Suspected of damaging fertility or the unborn child.

Specific target organ toxicity (single exposure): May cause drowsiness or dizziness.

Specific target organ toxicity (repeated exposure): May cause damage to organs through prolonged or repeated exposure.

Aspiration hazard: Not classified

Potential Adverse human health effects and symptoms: Vapor inhalation of toluene may lead to impairment of coordination mental alertness, and reaction times, leading to accident proneness. Exposure to levels around 500ppm leads to narcotic effects including nausea, headache and mental confusion.

Symptoms/injuries after inhalation: May cause drowsiness or dizziness. May cause respiratory irritation. Toluene is moderately toxic by inhalation. Human systemic effects include CNS recording changes, hallucinations, distorted perceptions.

Symptoms/injuries after skin contact: Causes skin irritation.

Symptoms/injuries after eye contact: Causes serious eye irritation.

Symptoms/injuries after ingestion: May be harmful if swallowed. Oral toxicity is associated with toluene which causes psychophysiological and bone marrow changes nausea, vomiting, headache, visual effects including blindness.

Reason for classification: Expert judgment

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general: Harmful to aquatic life.

<table>
<thead>
<tr>
<th>Toluene (108-88-3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC50 fish 1</td>
</tr>
<tr>
<td>EC50 Daphnia 1</td>
</tr>
<tr>
<td>LC50 fish 2</td>
</tr>
<tr>
<td>EC50 Daphnia 2</td>
</tr>
</tbody>
</table>

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

<table>
<thead>
<tr>
<th>Toluene (108-88-3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Log Pow</td>
</tr>
</tbody>
</table>

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

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
- Sewage disposal recommendations: Do not dispose of waste into sewer.
- Waste disposal recommendations: 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) : 1294
- DOT NA no. : UN1294

14.2. UN proper shipping name
- Proper Shipping Name (DOT) : Toluene (METHOXY(POLYETHYLENEOXY)PROPYLTRIMETHOXYSILANE 4-8% in toluene)
- Class (DOT) : 3 - Class 3 - Flammable and combustible liquid 49 CFR 173.120
- Hazard labels (DOT) : 3 - Flammable liquid
- Packing group (DOT) : II - Medium Danger
- DOT Packaging Exceptions (49 CFR 173.xxx) : 150
- DOT Packaging Non Bulk (49 CFR 173.xxx) : 202
- DOT Packaging Bulk (49 CFR 173.xxx) : 242

14.3. Additional information
- Emergency Response Guide (ERG) Number : 130
- Other information : No supplementary information available.
- Transport by sea
  - DOT Vessel Stowage Location : B - (i) The material may be stowed “on deck” or “under deck” on a cargo vessel and on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers, or one passenger per each 3 m of overall vessel length; and (ii) “On deck only” on passenger vessels in which the number of passengers specified in paragraph (k)(2)(i) of this section is exceeded

Air transport
- DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : 5 L
- DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 60 L

SECTION 15: Regulatory information

15.1. US Federal regulations
- Gelest® UtenSil™ Wetting Agent W1
  - TSCA Exemption/Exclusion
    - CAUTION: This material is supplied for research and development purposes subject to the R&D exemption under TSCA, 40 CFR 720.36, and must meet the requirements of the exemption, including supervision by a "technically qualified individual" as defined by 40 CFR 720.3(ee). The use of this material for "commercial purposes" as defined by 40 CFR 720.3(r) is not permitted in the United States
- Toluene (108-88-3)
  - Listed on the United States TSCA (Toxic Substances Control Act) inventory
  - Subject to reporting requirements of United States SARA Section 313
- SARA Section 313 - Emission Reporting : 1.0 %
- Methoxy(polyethyleneoxy)propyltrimethoxysilane (65994-07-2)
  - Listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations
## Gelest® UtenSil™ Wetting Agent W1
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### Toluene (108-88-3)
- Listed on the AICS (Australian Inventory of Chemical Substances)
- Listed on the Canadian DSL (Domestic Substances List)
- 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 ECL (Existing Chemicals List)
- Listed on the Japanese Pois[onous and Deleterious Substances Control Law](#)
- Listed on the Japanese Pollutant Release and Transfer Register Law (PRTR Law)
- Listed on the Canadian IDL (Ingredient Disclosure List)
- Listed on INSQ (Mexican national Inventory of Chemical Substances)
- Listed on CICR (Turkish Inventory and Control of Chemicals)

### Methoxy(polyethyleneoxy)propyltrimethoxysilane (65994-07-2)
- Listed on the Canadian DSL (Domestic Substances List)
- Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)

### 15.3. US State regulations

#### Gelest® UtenSil™ Wetting Agent W1(1)

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

#### Toluene (108-88-3)

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

#### Methoxy(polyethyleneoxy)propyltrimethoxysilane (65994-07-2)

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

### Toluene (108-88-3)
- U.S. - Massachusetts - Right To Know List
- U.S. - New Jersey - Right to Know Hazardous Substance List
- U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List
- U.S. - Pennsylvania - RTK (Right to Know) List

### 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.

**Full text of H-phrases:**

<table>
<thead>
<tr>
<th>H-phrases</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>H225</td>
<td>Highly flammable liquid and vapor</td>
</tr>
<tr>
<td>H304</td>
<td>May be fatal if swallowed and enters airways</td>
</tr>
<tr>
<td>H315</td>
<td>Causes skin irritation</td>
</tr>
<tr>
<td>H319</td>
<td>Causes serious eye irritation</td>
</tr>
<tr>
<td>H336</td>
<td>May cause drowsiness or dizziness</td>
</tr>
<tr>
<td>H361</td>
<td>Suspected of damaging fertility or the unborn child</td>
</tr>
<tr>
<td>H373</td>
<td>May cause damage to organs through prolonged or repeated exposure</td>
</tr>
</tbody>
</table>