SECTION 1: Identification

1.1. Identification

Product name: Gelest® UtenSil™ Dissolution Agent D1
Product code: PP1-USD1
Product form: Mixture
Physical state: Liquid
Synonyms: SILICONE CLEANING SOLVENT; ODORLESS MINERAL SPIRITS - AROMATIC SULFONIC ACID BLEND
Chemical family: PETROLEUM DISTILLATE

1.2. Recommended use and restrictions on use

Recommended use: Chemical intermediate

1.3. Supplier

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: Hazard(s) Identification

2.1. Classification of the substance or mixture

GHS-US classification
- Flammable liquids Category 4: H227 Combustible liquid
- Skin corrosion/irritation Category 1C: H314 Causes severe skin burns and eye damage
- Serious eye damage/eye irritation Category 1: H318 Causes serious eye damage
- Specific target organ toxicity (single exposure) Category 3: H335 May cause respiratory irritation
- Aspiration hazard Category 1: H304 May be fatal if swallowed and enters airways

Full text of H statements: see section 16

2.2. GHS Label elements, including precautionary statements

Hazard pictograms (GHS US):

Signal word (GHS US): Danger
Hazard statements (GHS US): H227 - Combustible liquid
H304 - May be fatal if swallowed and enters airways
H314 - Causes severe skin burns and eye damage
H335 - May cause respiratory irritation

Precautionary statements (GHS US):
- P280 - Wear protective gloves/protective clothing/eye protection/face protection.
- P260 - Do not breathe vapors.
- P271 - Use only outdoors or in a well-ventilated area.
- P301+P330+P331 - If swallowed: Immediately call a POISON CENTER
- P303+P361+P353 - If on skin (or hair): take off immediately all contaminated clothing. Rinse skin with water/shower
- P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing
- P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
- P310 - Immediately call a POISON CENTER
- P321 - Specific treatment (see first aid instructions on this label)
- P363 - Wash contaminated clothing before reuse.
- P370+P378 - In case of fire: Use water spray, foam, carbon dioxide, dry chemical to extinguish.
- P403+P233 - Store in a well-ventilated place. Keep container tightly closed.
- P403+P235 - Keep in a cool place
- P405 - Store locked up.

Print date: 04/10/2019
EN (English US)
SDS ID: PP1-USD1
2.3. Hazards not otherwise classified (HNOC)
No additional information available

2.4. Unknown acute toxicity (GHS US)
Not applicable

SECTION 3: Composition/Information on ingredients
3.1. Substances
Not applicable

3.2. Mixtures

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>GHS-US classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Light petroleum distillate-hydrotreated</td>
<td>(CAS-No.) 64742-47-8</td>
<td>75 - 85</td>
<td>Flam. Liq. 4, H227, Skin Irrit. 2, H315, Eye Irrit. 2A, H319, STOT SE 3, H335, Asp. Tox. 1, H304</td>
</tr>
<tr>
<td>Dodecylbenzene sulfonic acid</td>
<td>(CAS-No.) 27176-87-0</td>
<td>15 - 25</td>
<td>Acute Tox. 4 (Oral), H302, Skin Corr. 1C, H314, Eye Dam. 1, H318</td>
</tr>
</tbody>
</table>

Full text of hazard classes and H-statements: see section 16

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. IF exposed or concerned: Get medical advice/attention.

First-aid measures after inhalation: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical advice/attention.

First-aid measures after skin contact: Wash with plenty of soap and water. Get immediate 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 immediate medical advice/attention.

First-aid measures after ingestion: Never give anything by mouth to an unconscious person. Immediately call a poison center or doctor/physician.

4.2. Most important symptoms and effects (acute and delayed)
Symptoms/effects: Causes severe skin burns and eye damage.
Symptoms/effects after inhalation: May cause respiratory irritation. Petroleum Distillate can cause vertigo, incoordination and stupor at 5000ppm.
Symptoms/effects after skin contact: Causes (severe) skin burns.
Symptoms/effects after eye contact: Causes serious eye damage.
Symptoms/effects after ingestion: May be fatal if swallowed and enters airways.
Chronic symptoms: The related nonhydrotreated volatile petroleum distillate is a potential human carcinogen.

4.3. Immediate medical attention and special treatment, if necessary
No additional information available

SECTION 5: Fire-fighting measures
5.1. Suitable (and unsuitable) extinguishing media
Unsuitable extinguishing media: Do not use straight streams.

5.2. Specific hazards arising from the chemical
Fire hazard: Combustible liquid. Irritating fumes of hydrochloric acid and organic acid vapors may develop when material is exposed to water or open flame.

5.3. Special protective equipment and precautions for fire-fighters
Firefighting instructions: Use water spray to cool exposed surfaces. Exercise caution when fighting any chemical fire.
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: Remove ignition sources. 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.

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: Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
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. Ground/bond container and receiving equipment. 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
Storage conditions: Keep container tightly closed. Keep in a cool place. Store locked up.
Incompatible materials: Oxidizing agent.
Storage area: Store in a well-ventilated place. Store away from heat.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters
No additional information available

8.2. Appropriate engineering controls
Appropriate engineering controls: Provide local exhaust or general room ventilation.

8.3. Individual protection measures/Personal protective equipment
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 or face shield. 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 combination organic vapor/acid gas (yellow cartridge) respirator.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties
Physical state: Liquid
Appearance: Liquid.
Color: Amber.
Odor: Mild.
Odor threshold: No data available
Refractive index: No data available
pH: No data available
Relative evaporation rate (butyl acetate=1): No data available
Melting point: No data available
Freezing point: < -20 °C
Boiling point: 200 °C (initial)
Flash point: 76 °C
Auto-ignition temperature: 210 °C (petroleum distillate)
Decomposition temperature: No data available
Flammability (solid, gas): Combustible liquid
Vapor pressure: < 10 mm Hg @ 20°C
Relative vapor density at 20 °C: > 3
Relative density: 0.847
% Volatiles: > 70 %
Solubility: Insoluble in water. Reacts with water.
Log Pow: No data available
Log Kow: No data available
Viscosity, kinematic: 3 - 5 cSt
Viscosity, dynamic: No data available
Explosive properties: No data available
Oxidizing properties: No data available
Explosion limits: 0.7 - 5 vol % (lower; upper: petroleum distillate)

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 stored under a dry inert atmosphere.

10.3. Possibility of hazardous reactions
No additional information available

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

10.5. Incompatible materials
Oxidizing agent.

10.6. Hazardous decomposition products
Organic acid vapors.

SECTION 11: Toxicological information

11.1. Information on toxicological effects
Acute toxicity: Not classified

<table>
<thead>
<tr>
<th>Dodecylbenzene sulfonic acid (27176-87-0)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 oral rat</td>
</tr>
<tr>
<td>ATE US (oral)</td>
</tr>
</tbody>
</table>

Skin corrosion/irritation: Causes severe skin burns and eye damage.
Serious eye damage/irritation: Causes serious eye damage.
Respiratory or skin sensitization: Not classified
Germ cell mutagenicity: Not classified
Carcinogenicity: Not classified

Reproductive toxicity: Not classified
Specific target organ toxicity – single exposure: May cause respiratory irritation.
Specific target organ toxicity – repeated exposure: Not classified
Gelest® UtenSil™ Dissolution Agent D1
Safety Data Sheet

Aspiration hazard: May be fatal if swallowed and enters airways.
Symptoms/effects after inhalation: May cause respiratory irritation. Petroleum Distillate can cause vertigo, incoordination and stupor at 5000ppm.
Symptoms/effects after skin contact: Causes (severe) skin burns.
Symptoms/effects after eye contact: Causes serious eye damage.
Symptoms/effects after ingestion: May be fatal if swallowed and enters airways.
Chronic symptoms: The related nonhydrotreated volatile petroleum distillate is a potential human carcinogen.
Reason for classification: Expert judgment

SECTION 12: Ecological information
12.1. Toxicity
No additional information available
12.2. Persistence and degradability
No additional information available
12.3. Bioaccumulative potential
No additional information available
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 the ozone layer: No additional information available

SECTION 13: Disposal considerations
13.1. Disposal methods
Sewage disposal recommendations: Do not dispose of waste into sewer.
Product/Packaging 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.
Ecology - waste materials: Avoid release to the environment.

SECTION 14: Transport information
14.1. UN number
UN-No.(DOT): 2586
DOT NA no.: UN2586

14.2. UN proper shipping name
Transport document description: UN2586 Alkyl sulfonic acids, liquid, 8, III
Proper Shipping Name (DOT): Alkyl sulfonic acids, liquid
Class (DOT): 8 - Class 8 - Corrosive material 49 CFR 173.136
Packing group (DOT): III - Minor Danger
Hazard labels (DOT): 8 - Corrosive

DOT Packaging Non Bulk (49 CFR 173.xxx): 203
DOT Packaging Bulk (49 CFR 173.xxx): 241
DOT Packaging Exceptions (49 CFR 173.xxx): 154

14.3. Additional information
Emergency Response Guide (ERG) Number: 153
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 : 5 L
(49 CFR 173.27)
DOT Quantity Limitations Cargo aircraft only (49 : 60 L
CFR 175.75)

SECTION 15: Regulatory information
15.1. US Federal regulations

**Dodecylbenzene sulfonic acid (27176-87-0)**
Listed on the United States TSCA (Toxic Substances Control Act) inventory

**Light petroleum distillate-hydrotreated (64742-47-8)**
Listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations

**CANADA**

**Dodecylbenzene sulfonic acid (27176-87-0)**
Listed on the Canadian DSL (Domestic Substances List)

**Light petroleum distillate-hydrotreated (64742-47-8)**
Listed on the Canadian DSL (Domestic Substances List)

**EU-Regulations**
No additional information available

**National regulations**

**Dodecylbenzene sulfonic acid (27176-87-0)**
Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Listed on NZIoC (New Zealand Inventory of Chemicals)

**Light petroleum distillate-hydrotreated (64742-47-8)**
Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)

15.3. US State regulations
California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

SECTION 16: Other information

Full text of H-phrases:

| H227 | Combustible liquid |
| H302 | Harmful if swallowed |
| H304 | May be fatal if swallowed and enters airways |
| H314 | Causes severe skin burns and eye damage |
| H315 | Causes skin irritation |
| H318 | Causes serious eye damage |
| H319 | Causes serious eye irritation |
| H335 | May cause respiratory irritation |

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; GHS: The Globally Harmonized System of Classification and Labelling; APF: Assigned Protection Factor.
Hazard Rating

Health: 3 Serious Hazard - Major injury likely unless prompt action is taken and medical treatment is given.

Flammability: 2 Moderate Hazard - Materials which must be moderately heated or exposed to high ambient temperatures before ignition will occur. Includes liquids having a flash point at or above 100°F but below 200°F. (Classes II & IIIA)

Physical: 1 Slight Hazard - Materials that are normally stable but can become unstable (self-react) at high temperatures and pressures. Materials may react non-violently with water or undergo hazardous polymerization in the absence of inhibitors.

Prepared by safety and environmental affairs.

Date of issue: 08/31/2015  Version: 1.0

SDS US (GHS HazCom 2012) - Custom

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

The information contained in this document has been gathered from reference materials and/or Gelest, Inc. test data and is to the best knowledge and belief of Gelest, Inc. accurate and reliable. Such information is offered solely for your consideration, investigation and verification. It is not suggested or guaranteed that the hazard precautions or procedures described are the only ones which exist. Gelest, Inc. makes no warranties, express or implied, with respect to the use of such information and assumes no responsibility therefore. Information on this safety data sheet is not intended to constitute a basis for product specifications.

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UtenSil® Wetting Agent W1
Hydrophilic Modification Solution for Reprographic Grade Silicones

Description
UtenSil® Wetting Agent W1 increases the wettability of reprographic silicone surfaces.

Solution Properties
<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Form</td>
<td>clear, colorless</td>
</tr>
<tr>
<td>Solids</td>
<td>5-7 wt%</td>
</tr>
<tr>
<td>Flashpoint</td>
<td>6°C</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>0.88</td>
</tr>
<tr>
<td>Viscosity</td>
<td>1.0-2.0 cSt</td>
</tr>
<tr>
<td>Contact Angle, water (1mm thickness)</td>
<td>20°</td>
</tr>
</tbody>
</table>

Shelf life
12 months when stored below 25°C in sealed containers. Keep container sealed after dispensing product.

Application Methods
Immerse oxygen plasma treated reprographic silicone into UtenSil® Wetting Agent W1 for 1 hour. (Reprographic silicones with a thickness >1mm may require longer immersion time in UtenSil® Solution.) Dip the silicone into ethanol to remove excess material. Cure wetting agent on silicone surface at 100°C over 2 hours.

Standard Packaging
PP1-USW1 UtenSil® Wetting Agent W1
100 g
1 kg

UtenSil® Dissolution Agent D1
Digestion Solution for Reprographic Grade Silicones

Description
UtenSil® Dissolution Agent D1 is a cleaning solvent that chemically reacts and dissolves silicones.

Solution Properties
<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Form</td>
<td>amber-light brown</td>
</tr>
<tr>
<td>Solids</td>
<td>20-30 wt%</td>
</tr>
<tr>
<td>Flashpoint</td>
<td>93°C</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>0.85</td>
</tr>
<tr>
<td>Viscosity</td>
<td>5-10 cSt</td>
</tr>
</tbody>
</table>

Shelf life
12 months when stored below 25°C in sealed containers. Keep container sealed after dispensing product.

Application Methods
Place silicone to be dissolved in a stainless steel or glass container which may be covered to reduce evaporation. Remove any water on the silicone by physical drying or heating in an oven. Immerse silicone in UtenSil® Dissolution Agent D1 solution at room temperature. Dissolution time depends on the type of silicone, thickness and surface area. A typical silicone with a 5 mm section thickness will dissolve in 4-8 hours. Dissolution can be accelerated by warming to 35-50°C. Spot dissolution can be achieved by deposition of Dissolution Agent D1 with a pipette and removing the dissolved material with a pipette, followed by a brief acetone and water rinse.

Standard Packaging
PP1-USD1 UtenSil® Dissolution Agent D1
100 g
1 kg