SAFETY DATA SHEET

1. Identification

Product identifier: Silsoft® A+ conditioning silicone

Other means of identification
Synonyms: Amino Modified Silicone Polyether Copolymer

Recommended use and restriction on use
Recommended use: Industrial use Component in personal care products
Restrictions on use: Not known.

: Momentive Performance Materials - Sistersville
10851 Energy Highway
FRIENDLY WV 26146

2. Hazard(s) identification

Hazard Classification

Health Hazards
Toxic to reproduction Category 2

Label Elements

Hazard Symbol:

Signal Word: Warning

Hazard Statement: Suspected of damaging fertility or the unborn child.

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.
Response: If exposed or concerned: Get medical advice/attention.

Storage: Store locked up.

Disposal: Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Other hazards which do not result in GHS classification: None.

Substance(s) formed under the conditions of use: Component in personal care products

3. Composition/information on ingredients

Mixtures

<table>
<thead>
<tr>
<th>Chemical Identity</th>
<th>CAS number</th>
<th>Content in percent (%)</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glycerol</td>
<td>56-81-5</td>
<td>20 - &lt;50%</td>
<td># This substance has workplace exposure limit(s).</td>
</tr>
<tr>
<td>Octamethylcyclotetrasiloxane</td>
<td>556-67-2</td>
<td>0.1 - &lt;1%</td>
<td>No data available.</td>
</tr>
</tbody>
</table>

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

Ingestion: If swallowed, do NOT induce vomiting. Give a glass of water. Seek medical advice. Never give liquid to an unconscious person. If vomiting occurs, keep head low so that stomach content doesn’t get into the lungs.

Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, trained personnel should give oxygen. Get medical attention immediately. Place unconscious person on the side in the recovery position and ensure breathing can take place.

Skin Contact: Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention if symptoms occur. Wash contaminated clothing before reuse. Destroy contaminated clothing and shoes.

Eye contact: Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Get medical attention if symptoms persist.

Most important symptoms/effects, acute and delayed
Symptoms: No data available.
Hazards: No data available.

Indication of immediate medical attention and special treatment needed

Treatment: Treatment is symptomatic and supportive.

5. Fire-fighting measures

General Fire Hazards: Self-contained breathing apparatus and full protective clothing must be worn in case of fire. Use standard firefighting procedures and consider the hazards of other involved materials. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply.

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media: All standard extinguishing agents are suitable.

Unsuitable extinguishing media: Avoid water in straight hose stream; will scatter and spread fire.

Specific hazards arising from the chemical: In case of fire, carbon monoxide and carbon dioxide may be formed. Acute overexposure to the products of combustion may result in irritation of the respiratory tract. Measurements at temperatures above 150°C in presence of air (oxygen) have shown that small amounts of formaldehyde are formed due to oxidative degradation.

Special protective equipment and precautions for firefighters

Special fire fighting procedures: Keep away from sources of ignition - No smoking. All equipment used when handling the product must be grounded.

Special protective equipment for fire-fighters: Firefighters must wear NIOSH/MSHA approved positive pressure self-contained breathing apparatus with full face mask and full protective clothing.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures: Caution: Contaminated surfaces may be slippery. Keep unprotected persons away. Avoid contact with skin and eyes. Use personal protective equipment. Keep out of reach of children.

Methods and material for containment and cleaning up: Wipe, scrape or soak up in an inert material and put in a container for disposal. Wash walking surfaces with detergent and water to reduce slipping hazard. Wear proper protective equipment as specified in the protective equipment section.
Notification Procedures: Remove sources of ignition. Pay attention to the risk of combustion by fire or other sources of ignition.

Environmental Precautions: Do not allow runoff to sewer, waterway or ground.

7. Handling and storage

Precautions for safe handling: Sensitivity to static discharge is not expected. Do not get in eyes, on skin, on clothing. Do not taste or swallow. See Section 8 of the SDS for Personal Protective Equipment.

Conditions for safe storage, including any incompatibilities: Keep in a cool, ventilated location far from heat source and flame. Keep container closed. Use original container or packaging of similar material of construction.

8. Exposure controls/personal protection

Control Parameters

<table>
<thead>
<tr>
<th>Occupational Exposure Limits</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chemical Identity</th>
<th>type</th>
<th>Exposure Limit Values</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glycerol - Total dust.</td>
<td>PEL</td>
<td>15 mg/m3</td>
<td>US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)</td>
</tr>
<tr>
<td>Glycerol - Respirable fraction.</td>
<td>PEL</td>
<td>5 mg/m3</td>
<td>US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)</td>
</tr>
<tr>
<td></td>
<td>TWA</td>
<td>5 mg/m3</td>
<td>US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)</td>
</tr>
<tr>
<td>Glycerol - Total dust.</td>
<td>TWA</td>
<td>10 mg/m3</td>
<td>US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)</td>
</tr>
</tbody>
</table>

Appropriate Engineering Controls: Provide eyewash station and safety shower. Local exhaust is recommended. Observe good industrial hygiene practices.

Individual protection measures, such as personal protective equipment

| General information: | No data available. |
| Eye/face protection: | Safety glasses with side shields |
| Skin Protection:     |                            |
| Hand Protection:     | Chemical resistant gloves |
| Other:               | Wear suitable protective clothing and eye/face protection. |
Respiratory Protection: If exposure limits are exceeded or respiratory irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Supplied air respirators may be required for non-routine or emergency situations. Respiratory protection must be provided in accordance with OSHA regulations (see 29CFR 1910.134).

Hygiene measures: Avoid contact with eyes, skin, and clothing. Wash hands after handling. When using do not eat, drink or smoke.

9. Physical and chemical properties

Appearance

| Physical state:          | liquid          |
| Form:                   | liquid          |
| Color:                  | Pale yellow     |
| Odor:                   | Faint           |
| Odor threshold:         | No data available. |
| pH:                     | No data available. |
| Melting point/freezing point: | No data available. |
| Initial boiling point and boiling range: | No data available. |
| Flash Point:            | > 98.88 °C (ASTM D 93) |
| Evaporation rate:       | No data available. |
| Flammability (solid, gas): | No data available. |

Upper/lower limit on flammability or explosive limits

| Flammability limit - upper (%): | No data available. |
| Flammability limit - lower (%): | No data available. |
| Explosive limit - upper (%):   | No data available. |
| Explosive limit - lower (%):   | No data available. |

Heat of combustion: No data available.

Vapor pressure: 1.33 hPa

Vapor density: > 1

Density: 1.05 g/cm3

Relative density: No data available.

Solubility(ies)

| Solubility in water: | Dispersible |
| Solubility (other):  | Insoluble   |

Partition coefficient (n-octanol/water) Log Pow: No data available.

Auto-ignition temperature: No data available.
10. Stability and reactivity

Reactivity: Material is stable under normal conditions.

Chemical Stability: Material is stable under normal conditions.

Possibility of hazardous reactions: Under normal conditions of storage and use, hazardous polymerization will not occur.

Conditions to avoid: None known.

Incompatible Materials: Strong Acids, Strong Bases

Hazardous Decomposition Products: In case of fire, gives off (emits): Oxides of silicon. Carbon oxides. Measurements at temperatures above 150°C in presence of air (oxygen) have shown that small amounts of formaldehyde are formed due to oxidative degradation.

11. Toxicological information

Information on likely routes of exposure
Ingestion: No data available.

Inhalation: No data available.

Skin Contact: No data available.

Eye contact: No data available.

Symptoms related to the physical, chemical and toxicological characteristics
Ingestion: No data available.

Inhalation: No data available.

Skin Contact: No data available.

Eye contact: No data available.
Information on toxicological effects

Acute toxicity (list all possible routes of exposure)

**Oral**
- Product: LD 50 (Rat): > 5,000 mg/kg
- Specified substance(s):
  - Octamethylcyclotetrasiloxane: LD 50 (Rat): 4,800 mg/kg
  - LD 50 (Mouse): 1,700 mg/kg

**Dermal**
- Product: LD 50 (Rat): > 2,000 mg/kg
- Specified substance(s):
  - Octamethylcyclotetrasiloxane: LD 50 (Rat): 2,400 mg/kg

**Inhalation**
- Product: Not classified for acute toxicity based on available data.
- Specified substance(s):
  - Octamethylcyclotetrasiloxane: LC50 (Rat): 12.1 mg/l
  - LC50 (Rat): 36 mg/l

**Repeated dose toxicity**
- Product: No data available.

**Skin Corrosion/Irritation**
- Product: (Rabbit): Slightly irritating. The health hazard evaluation is based on the toxicological properties of a similar material.

**Serious Eye Damage/Eye Irritation**
- Product: (Rabbit): Slightly irritating. The health hazard evaluation is based on the toxicological properties of a similar material.

**Respiratory or Skin Sensitization**
- Product: Human patch test: negative The health hazard evaluation is based on the toxicological properties of a similar material.

**Carcinogenicity**
- Product: No data available.
IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:

No carcinogenic components identified

US. National Toxicology Program (NTP) Report on Carcinogens:
No carcinogenic components identified

No carcinogenic components identified

Germ Cell Mutagenicity

In vitro
Product: 
Ames-Test: negative The health hazard evaluation is based on the toxicological properties of a similar material.

In vivo
Product: 
No data available.

Specified substance(s):
Octamethylcyclotetrasiloxane
Chromosomal aberration (OECD-Guideline 474 (Genetic Toxicology: Micronucleus Test)) Inhalation (Rat, male and female): negative

Reproductive toxicity
Product: 
No data available.

Specific Target Organ Toxicity - Single Exposure
Product: 
No data available.

Specific Target Organ Toxicity - Repeated Exposure
Product: 
No data available.

Aspiration Hazard
Product: 
No data available.

Other effects: 
This product is not tested., The health hazard evaluation is based on the toxicological properties of a similar material. No data available.

Specified substance(s):
Octamethylcyclotetrasiloxane (D4) Ingestion: Rodents given large doses via oral gavage of Octamethylcyclotetrasiloxane (1600mg/kg/day, 14 days), developed increased liver weights relative to unexposed control animals due to hepatocellular hyperplasia (increased number of liver cells which appear normal) as well as hypertrophy (increased cell size). Inhalation: In inhalation studies, laboratory rodents exposed to Octamethylcyclotetrasiloxane (300 ppm five days/week, 90 days) developed increased liver weights in female animals relative to unexposed control animals. When the exposure was stopped, liver weights returned to normal. Microscopic examination of the liver cells did not show any evidence of pathology. This response in rats, which does not affect the animal's health, is well-documented and widely recognized. It is related to an increase of liver enzymes that metabolize and eliminate a material from the body. The increased liver weight reverses even while the D4 exposure continues. The finding is not adverse, but is considered a natural adaptive change in rats, and does not represent a hazard to humans. Inhalation studies utilizing laboratory rabbits and guinea pigs showed no effects on liver weights. Inhalation exposures typical of industrial usage (5-10 ppm) showed no toxic effects in rodents. Range finding reproductive studies were conducted (whole body inhalation, 70 days prior to mating, through mating, gestation and lactation), with D4. Rats were exposed to 70 and 700 ppm. In the 700 ppm group, there was a statistically significant reduction in mean litter size and in implantation sites. No D4 related clinical signs were observed in the pups and no exposure related pathological findings were found. A two-year, combined chronic/carcinogenicity study, during which rats were exposed to D4 by inhalation, data showed a statistically significant increase in a benign uterine tumor in female rats exposed at the highest level—a level much higher than the low levels that consumers or workers may encounter. An expert panel of independent scientists who have reviewed the results of this research concur that the finding seen in the two-year study occurred through a biological pathway that is specific to the rat and is not relevant to humans. Therefore, this observed effect does not indicate a potential health hazard to humans. In developmental toxicity studies, rats and rabbits were exposed to D4 at concentrations up to 700 ppm and 500 ppm, respectively. No teratogenic effects (birth defects) were observed in either study.

**Ingestion:**
No data available.

**Inhalation:**
No data available.

**Skin Contact:**
No data available.

**Eye contact:**
No data available.
No data available.

Dermal
No data available.

Inhalation
No data available.

Repeated dose toxicity
No data available.

Skin Corrosion/Irritation
No data available.

Serious Eye Damage/Eye Irritation
No data available.

Respiratory or Skin Sensitization
No data available.

Carcinogenicity
No data available.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:
No data available.

US. National Toxicology Program (NTP) Report on Carcinogens:
No data available.

No data available.

Germ Cell Mutagenicity
In vitro
No data available.

Germ Cell Mutagenicity
In vivo
No data available.

Reproductive toxicity
No data available.

Specific Target Organ Toxicity - Single Exposure
No data available.

**Specific Target Organ Toxicity - Single Exposure**
No data available.

**Target Organs**
No data available.

**Aspiration Hazard**
No data available.

**Other effects**
No data available.

### 12. Ecological information

**Ecotoxicity:**

**Acute hazards to the aquatic environment:**

**Fish**
- **Product:** EC50 (Pimephales promelas, 96 h): > 1,000 mg/l

**Aquatic Invertebrates**
- **Product:** No data available.

**Chronic hazards to the aquatic environment:**

**Fish**
- **Product:** No data available.

**Aquatic Invertebrates**
- **Product:** No data available.

**Toxicity to Aquatic Plants**
- **Product:** EC50 (Desmodesmus subspicatus (green algae), 72 h): > 100 mg/l

**Persistence and Degradability**

**Biodegradation**
- **Product:** No data available.

**Specified substance(s):**
- Octamethylcyclotetrasiloxane 3.7 % (29 d, 310 Ready Biodegradability - CO₂ in Sealed Vessels (Headspace Test)) Not readily biodegradable.

**BOD/COD Ratio**

SDS_US 11/15
Silsoft® A+ conditioning silicone

Product: No data available.

Bioaccumulative potential

Bioconcentration Factor (BCF)

Product: No data available.

Specified substance(s):
Octamethylcyclotetrasiloxane

Fathead Minnow, Bioconcentration Factor (BCF): 12.40

Partition Coefficient n-octanol / water (log Kow)

Product: No data available.

Mobility in soil: No data available.

Known or predicted distribution to environmental compartments

Glycerol
Octamethylcyclotetrasiloxane

No data available.

Other adverse effects: No data available.

13. Disposal considerations

Disposal instructions: Disposal should be made in accordance with federal, state and local regulations.

Contaminated Packaging: Dispose of as unused product.

14. Transport information

DOT
Not regulated.

IMDG
Not regulated.

IATA
Not regulated.

Special precautions for user: This product is not regarded as dangerous goods according to the national and international regulations on the transport of dangerous goods.
15. Regulatory information

US Federal Regulations

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)
None present or none present in regulated quantities.

CERCLA Hazardous Substance List (40 CFR 302.4):
None present or none present in regulated quantities.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories
Delayed (Chronic) Health Hazard
Fire Hazard

SARA 302 Extremely Hazardous Substance
None present or none present in regulated quantities.

SARA 304 Emergency Release Notification
None present or none present in regulated quantities.

SARA 311/312 Hazardous Chemical

<table>
<thead>
<tr>
<th>Chemical Identity</th>
<th>Threshold Planning Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glycerol</td>
<td>10000 lbs</td>
</tr>
<tr>
<td>Octamethylcyclotetrasiloxane</td>
<td>10000 lbs</td>
</tr>
</tbody>
</table>

SARA 313 (TRI Reporting)
None present or none present in regulated quantities.

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)
None present or none present in regulated quantities.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):
None present or none present in regulated quantities.

US State Regulations

US. California Proposition 65
No ingredient regulated by CA Prop 65 present.

US. New Jersey Worker and Community Right-to-Know Act

<table>
<thead>
<tr>
<th>Chemical Identity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glycerol</td>
</tr>
<tr>
<td>Aminomodified Silicone-Polyether Copolymer</td>
</tr>
<tr>
<td>Water</td>
</tr>
<tr>
<td>Dipropylene Glycol</td>
</tr>
<tr>
<td>Decamethylcyclopentasiloxane</td>
</tr>
</tbody>
</table>
Octamethylcyclotetrasiloxane

US. Massachusetts RTK - Substance List
Chemical Identity
Glycerol

US. Pennsylvania RTK - Hazardous Substances
Chemical Identity
Glycerol
Dipropylene Glycol

US. Rhode Island RTK
No ingredient regulated by RI Right-to-Know Law present.

Inventory Status:

<table>
<thead>
<tr>
<th>Inventory Status</th>
<th>Country/Region</th>
<th>Status</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia AICS:</td>
<td>y (positive listing)</td>
<td>Remarks: None.</td>
<td></td>
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<tr>
<td>EU EINECS List:</td>
<td>y (positive listing)</td>
<td>Remarks: None.</td>
<td></td>
</tr>
<tr>
<td>Japan (ENCS) List:</td>
<td>n (Negative listing)</td>
<td>Remarks: None.</td>
<td></td>
</tr>
<tr>
<td>China Inventory of Existing Chemical Substances:</td>
<td>y (positive listing)</td>
<td>Remarks: None.</td>
<td></td>
</tr>
<tr>
<td>Korea Existing Chemicals Inv. (KECI):</td>
<td>y (positive listing)</td>
<td>Remarks: None.</td>
<td></td>
</tr>
<tr>
<td>Canada DSL Inventory List:</td>
<td>q (quantity restricted)</td>
<td>Remarks: None.</td>
<td></td>
</tr>
<tr>
<td>Canada NDSL Inventory:</td>
<td>n (Negative listing)</td>
<td>Remarks: None.</td>
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<td>Philippines PICCS:</td>
<td>y (positive listing)</td>
<td>Remarks: None.</td>
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<tr>
<td>US TSCA Inventory:</td>
<td>y (positive listing)</td>
<td>Remarks: On TSCA Inventory</td>
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<tr>
<td>New Zealand Inventory of Chemicals:</td>
<td>n (Negative listing)</td>
<td>Remarks: None.</td>
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</tr>
<tr>
<td>Taiwan. Taiwan inventory (CSNN):</td>
<td>y (positive listing)</td>
<td>Remarks: None.</td>
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</tbody>
</table>

16. Other information, including date of preparation or last revision

HMIS Hazard ID

<table>
<thead>
<tr>
<th>Hazard ID</th>
<th>Health</th>
<th>Flammability</th>
<th>Physical Hazards</th>
</tr>
</thead>
<tbody>
<tr>
<td>* 0</td>
<td>1</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe; RNP - Rating not possible; *Chronic health effect

Issue Date: 01/20/2017
Revision Date: No data available.
<table>
<thead>
<tr>
<th>Version #:</th>
<th>2.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Further Information:</td>
<td>No data available.</td>
</tr>
<tr>
<td>Disclaimer:</td>
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