SECTION 1: Identification

1.1. Identification

Product name: (HEPTADECAFLUORO-1,1,2,2-TETRAHYDRODECYL)TRICHLOROSILANE
Product code: SIH5841.0
Product form: Substance
Physical state: Liquid
Formula: C10H4Cl3F17Si
Synonyms: PERFLUORODECYL-1H,1H,2H,2H-TRICHLOROSILANE; (1H,1H,2H,2H-PERFLUORODECYL)TRICHLOROSILANE
Chemical family: CHLOROSILANE

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
Skin corrosion/irritation Category 1B: H314 - Causes severe skin burns and eye damage
Serious eye damage/eye irritation Category 1: H318 - Causes serious eye damage
Full text of H statements: see section 16

2.2. GHS Label elements, including precautionary statements

GHS US labeling
Hazard pictograms (GHS US):

Signal word (GHS US): Danger
Hazard statements (GHS US):
- H314 - Causes severe skin burns and eye damage
- H318 - Causes serious eye damage
Precautionary statements (GHS US):
- P280 - Wear protective gloves/protective clothing/eye protection/face protection.
- P260 - Do not breathe vapors.
- P264 - Wash hands thoroughly after handling.
- P301+P330+P331 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
- P303+P361+P353 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
- 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 doctor
- P363 - Wash contaminated clothing before reuse.
- P405 - Store locked up.
- P501 - Dispose of contents/container to licensed waste disposal facility.
- P321 - Specific treatment (see first aid instructions on this label)

2.3. Hazards not otherwise classified (HNOC)

Other hazards not contributing to the classification: Hydrogen chloride may be formed by reaction with water and moisture in air. The US OSHA PEL (TWA) for hydrogen chloride is 5 ppm.

2.4. Unknown acute toxicity (GHS US)

Not applicable
(HEPTADECALUORO-1,1,2,2-
TETRAHYDRODECYL)TRICHLOROSILANE

Safety Data Sheet

SECTION 3: Composition/Information on ingredients

3.1. Substances

<table>
<thead>
<tr>
<th>Substance type</th>
<th>Mono-constituent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>(HEPTADECAFLUORO-1,1,2,2-TETRAHYDRODECYL)TRICHLOROSILANE</td>
</tr>
<tr>
<td>CAS-No.</td>
<td>78560-44-8</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>GHS-US classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Heptadecafluoro-1,1,2,2-tetrahydrodecyl)trichlorosilane</td>
<td>(CAS-No.) 78560-44-8</td>
<td>97 - 100</td>
<td>Skin Corr. 1B, H314</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Eye Dam. 1, H318</td>
</tr>
</tbody>
</table>

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

3.2. Mixtures

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. 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. Get medical advice/attention.

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 irritation to the respiratory tract.

Symptoms/effects after skin contact: Causes (severe) skin burns.

Symptoms/effects after eye contact: Causes serious eye damage.

Symptoms/effects after ingestion: May be harmful if swallowed.

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: Water.

5.2. Specific hazards arising from the chemical

Fire hazard: Irritating fumes of hydrogen chloride 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: 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

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.

Print date: 04/10/2019   EN (English US)   SDS ID: SIH5841.0   2/7
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.

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

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.

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

Storage conditions: Keep container tightly closed.

Incompatible materials: Acids, Alcohols, 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.
Molecular mass: 581.56 g/mol
Color: Clear to hazy.
Odor: Acrid. Similar to hydrogen chloride.
Odor threshold: No data available
Refractive index: 1.349
pH: No data available
Relative evaporation rate (butyl acetate=1): No data available
Melting point: No data available
Freezing point: 10 - 11 °C
Boiling point: 216 - 218 °C
Flash point: > 110 °C
Auto-ignition temperature: No data available
Decomposition temperature: No data available
Flammability (solid, gas): No data available
Vapor pressure: < 2 mm Hg @ 25°C
Relative vapor density at 20 °C: > 1
Relative density: 1.703
Solubility: Reacts with water.
Log Pow: No data available
Log Kow: No data available
Viscosity, kinematic: No data available
Viscosity, dynamic: No data available
Explosive properties: No data available
Oxidizing properties: No data available
Explosion 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 stored under a dry inert atmosphere.

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

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

10.5. Incompatible materials

10.6. Hazardous decomposition products

SECTION 11: Toxicological information

11.1. Information on toxicological effects
Acute toxicity: Not classified

<table>
<thead>
<tr>
<th>Compound</th>
<th>LD50 oral rat</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Heptadecafluoro-1,1,2,2-tetrahydrodecyl)trichlorosilane (78560-44-8)</td>
<td>&gt; 5000 mg/kg</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: Not classified
Specific target organ toxicity – repeated exposure: Not classified
Aspiration hazard: Not classified
Symptoms/effects after inhalation: May cause irritation to the respiratory tract.
Symptoms/effects after skin contact: Causes (severe) skin burns.
Symptoms/effects after eye contact: Causes serious eye damage.
Symptoms/effects after ingestion: May be harmful if swallowed.
Reason for classification: Expert judgment
# (HEPTADECAFLUORO-1,1,2,2-TETRAHYDRODECYL)TRICHLOROSILANE
## Safety Data Sheet

### 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**

<table>
<thead>
<tr>
<th>Other adverse effects</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effect on the ozone layer</td>
<td>No additional information available</td>
</tr>
</tbody>
</table>

Other information: Perfluorooctyl compounds have been shown to persist in the environment.

### SECTION 13: Disposal considerations

13.1. **Disposition methods**

| Sewage disposal recommendations | Do not dispose of waste into sewer. |
| Product/Packaging disposal recommendations | 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) | 2987 |
| DOT NA no. | UN2987 |

14.2. **UN proper shipping name**

| Transport document description | UN2987 Chlorosilanes, corrosive, n.o.s. ((HEPTADECAFLUORO-1,1,2,2-TETRAHYDRODECYL)TRICHLOROSILANE), 8, II |
| Proper Shipping Name (DOT) | Chlorosilanes, corrosive, n.o.s. ((HEPTADECAFLUORO-1,1,2,2-TETRAHYDRODECYL)TRICHLOROSILANE) |
| Class (DOT) | 8 - Class 8 : Corrosive material 49 CFR 173.136 |
| Packing group (DOT) | II - Medium Danger |
| Hazard labels (DOT) | 8 - Corrosive |

| DOT Packaging Non Bulk (49 CFR 173.xxx) | 206 |
| DOT Packaging Bulk (49 CFR 173.xxx) | 242 |
| DOT Packaging Exceptions (49 CFR 173.xxx) | None |

14.3. **Additional information**

| Emergency Response Guide (ERG) Number | 156 |
| Other information | No supplementary information available. |

**Transport by sea**

| DOT Vessel Stowage Location | C - The material must be stowed “on deck only” on a cargo vessel and on a passenger vessel. |
| DOT Vessel Stowage Other | 40 - Stow “clear of living quarters” |

**Air transport**

| DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) | Forbidden |
| DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) | 30 L |
**SECTION 15: Regulatory information**

### 15.1. US Federal regulations

Contains chemical(s) subject to TSCA 12b export notification if product is shipped outside the U.S.

<table>
<thead>
<tr>
<th>Chemical</th>
<th>CAS No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Heptadecafluoro-1,1,2,2-tetrahydroadecyl)trichlorosilane</td>
<td>78560-44-8</td>
</tr>
</tbody>
</table>

*97 - 100% (Heptadecafluoro-1,1,2,2-tetrahydroadecyl)trichlorosilane (78560-44-8)*

Listed on the United States TSCA (Toxic Substances Control Act) inventory

**EPA TSCA Regulatory Flag**

S - S - indicates a substance that is identified in a final Significant New Use Rule.

### 15.2. International regulations

#### CANADA

<table>
<thead>
<tr>
<th>Chemical</th>
<th>CAS No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Heptadecafluoro-1,1,2,2-tetrahydroadecyl)trichlorosilane</td>
<td>78560-44-8</td>
</tr>
</tbody>
</table>

Listed on the Canadian NDSL (Non-Domestic Substances List)

**EU-Regulations**

No additional information available

**National regulations**

<table>
<thead>
<tr>
<th>Chemical</th>
<th>CAS No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Heptadecafluoro-1,1,2,2-tetrahydroadecyl)trichlorosilane</td>
<td>78560-44-8</td>
</tr>
</tbody>
</table>

Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)

Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory

Listed on NZIoC (New Zealand Inventory of Chemicals)

### 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

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**SECTION 16: Other information**

**Full text of H-phrases:**

- **H314**: Causes severe skin burns and eye damage
- **H318**: Causes serious eye damage

**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: 11/21/2014    Revision date: 03/14/2019    Version: 2.3

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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NOTICE OF SIGNIFICANT NEW USE RULE
SIH5841.0
(HEPTADECAFLUORO-1,1,2,2-TETRAHYDRODECYL)TRICHLOROSILANE

Dear Customer:

The chemical product purchased, SIH5841.0 is subject to a U.S. Environmental Protection Agency (EPA) Significant New Use Rule (SNUR) under the Toxic Substances Control Act (TSCA) regulations. Any manufacturer or processor who intends to use a chemical substance for commercial purposes with an identified new use must file a Significant New Use Notification (SNUN) with EPA.

Please reference the US Code of Federal Regulations at 40 CFR Part 721.10536, Long-Chain Perfluoroalkyl Carboxylate Chemical Substances), to review the specific designated new use(s) for (HEPTADECAFLUORO-1,1,2,2-TETRAHYDRODECYL)TRICHLOROSILANE [CAS #78560-44-8] which would require EPA approval prior to that new use. If this product will be used for research and development purposes, please reference 40 CFR 721.47 to understand the specific conditions for the research and development exemption.

If you have questions or need more information related to a significant new use of a chemical substance, call the Toxic Substances Control Act (TSCA) Hotline at 202-554-1404 or email: tsca-hotline@epa.gov.

Best Regards,

Gelest, Inc. Regulatory Affairs Department