## SECTION 1: Identification

### 1.1. Identification

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product name</td>
<td>PERFLUORODODECYL-1H,1H,2H,2H-TRIETHOXYSILANE-PERFLUOROTETRADECYL-1H,1H,2H,2H-TRIETHOXYSILANE MIXTURE, 80%</td>
</tr>
<tr>
<td>Product code</td>
<td>SIP6720.5</td>
</tr>
<tr>
<td>Product form</td>
<td>Mixture</td>
</tr>
<tr>
<td>Physical state</td>
<td>Solid</td>
</tr>
<tr>
<td>Formula</td>
<td>C18H19O3F21Si, C20H19O3F25Si</td>
</tr>
<tr>
<td>Synonyms</td>
<td>(HENCOSAFLUORO-1,1,2,2-TETRAHYDRODODECYL)TRIETHOXYSILANE</td>
</tr>
<tr>
<td>Chemical family</td>
<td>ORGANOETHOXYSILANE</td>
</tr>
</tbody>
</table>

### 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**

<table>
<thead>
<tr>
<th>Classification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin corrosion/irritation Category 2</td>
<td>H315</td>
</tr>
<tr>
<td>Serious eye damage/eye irritation Category 2A</td>
<td>H319</td>
</tr>
</tbody>
</table>

**Full text of H statements**: see section 16

### 2.2. GHS Label elements, including precautionary statements

**GHS US labeling**

- **Signal word (GHS US)**: Warning
- **Hazard statements (GHS US)**: H315 - Causes skin irritation  
  H319 - Causes serious eye irritation
- **Precautionary statements (GHS US)**:
  - P280 - Wear protective gloves/protective clothing/eye protection/face protection.
  - P264 - Wash hands thoroughly after handling.
  - P302+P352 - If on skin: Wash with plenty of soap and water
  - P332+P313 - If skin irritation occurs: Get medical advice/attention.
  - P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
  - P337+P313 - If eye irritation persists: Get medical advice/attention.
  - P321 - Specific treatment (see first aid instructions on this label)
  - P362+P364 - Take off contaminated clothing and wash it before reuse.

### 2.3. Hazards not otherwise classified (HNOC)

- **Other hazards not contributing to the classification**: Additional ethanol may be formed by reaction with moisture and water. The hydrolysis product of this compound is ethanol. Overexposure to ethanol by skin absorption, inhalation or ingestion may have a narcotic effect (headache, nausea, drowsiness). Ethanol is metabolized to acetaldehyde and acetic acid which in large quantities result in metabolic acidosis, CNS depression and death due to respiratory arrest. The US OSHA PEL (TWA) for ethanol is 1000 ppm. This product contains ethanol which is classified as a carcinogen by IARC in alcoholic beverages.

### 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>Perfluorododecyl-1H,1H,2H,2H-triethoxysilane</td>
<td>(CAS-No.) 853403-04-0</td>
<td>30 - 60</td>
<td>Skin Irrit. 2, H315, Eye Irrit. 2, H319</td>
</tr>
<tr>
<td>Perfluorotetradecyl-1H,1H,2H,2H-triethoxysilane</td>
<td>(CAS-No.) 885275-56-9</td>
<td>20 - 40</td>
<td>Skin Irrit. 2, H315, Eye Irrit. 2, H319</td>
</tr>
<tr>
<td>Other Fluorinated Alkytriethoxysilanes</td>
<td>(CAS-No.) Not found</td>
<td>20 - 30</td>
<td>Skin Irrit. 2, H315, Eye Irrit. 2, H319</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.

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 medical advice/attention.

4.2. Most important symptoms and effects (acute and delayed)

Symptoms/effects after inhalation: May cause irritation to the respiratory tract. 
Symptoms/effects after skin contact: Causes skin irritation.
Symptoms/effects after eye contact: Causes serious eye irritation.
Symptoms/effects after ingestion: May be harmful if swallowed.

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. Immediate medical attention and special treatment, if necessary

NOTE TO PHYSICIAN: This product reacts with water in the acid contents of the stomach to form ethanol.

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: Irritating fumes of hydrogen fluoride and organic acid vapors may develop when material is exposed to 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 contact with skin and eyes. Do not breathe dust.

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

Notify authorities if product enters sewers or public waters. Prevent entry to sewers and public waters.
PERFLUORODODECYL-1H,1H,2H,2H-TRIETHOXY SILANE - PERFLUOROTETRADECYL-1H,1H,2H,2H-TRIETHOXY SILANE MIXTURE, 80%
Safety Data Sheet

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: 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 contact with skin and eyes. Do not breathe dust. Avoid dust formation. Provide local exhaust or general room ventilation to minimize exposure to dust.
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.

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. 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 dust and mist (orange cartridge) respirator.

SECTION 9: Physical and chemical properties
9.1. Information on basic physical and chemical properties
Physical state: Solid
Appearance: Semi-solid or waxy solid.
Molecular mass: 710 - 810 g/mol
Color: Off-white.
Odor: Mild. Ethanol.
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: 25 - 75 °C
Freezing point: No data available
Boiling point: 157 - 198 °C @ 1.5 mm Hg
PERFLUORODODECYL-1H,1H,2H,2H-TRIETHOXYSSILANE-
PERFLUOROTETRADECYL-1H,1H,2H,2H-TRIETHOXYSSILANE
MIXTURE, 80%
Safety Data Sheet

Flash point: > 110 °C
Auto-ignition temperature: No data available
Decomposition temperature: No data available
Flammability (solid, gas): No data available
Vapor pressure: < 0.1 mm Hg @ 25°C
Relative vapor density at 20 °C: > 1
Relative density: > 1.4
Solubility: Insoluble in water. 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 ethanol.

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

10.5. Incompatible materials

10.6. Hazardous decomposition products
At elevated temperatures (>260°C) forms: Organic acid vapors. Hydrogen fluoride.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity: Not classified
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

Reproductive toxicity: Not classified
Specific target organ toxicity – single exposure: Not classified

Specific target organ toxicity – repeated exposure: Not classified

Aspiration hazard: Not classified

Potential Adverse human health effects and symptoms: This compound liberates ethanol on contact with moisture. Material generates ethanol on contact with water or moisture in skin, eyes and mucous membranes and has an irritating, dehydrating effect on overexposed tissue.

Symptoms/effects after inhalation: May cause irritation to the respiratory tract.
Symptoms/effects after skin contact: Causes skin irritation.
Symptoms/effects after eye contact: Causes serious eye irritation.
Symptoms/effects after ingestion: May be harmful if swallowed.
PERFLUORODODECYL-1H,1H,2H,2H-TRIETHOXYSILANE-
PERFLUOROTETRADECYL-1H,1H,2H,2H-TRIETHOXYSILANE
MIXTURE, 80%
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.
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.
Ecology - waste materials: Avoid release to the environment.

SECTION 14: Transport information
14.1. UN number
Not regulated for transport.
14.2. UN proper shipping name
Not applicable
14.3. Additional information
Other information: No supplementary information available.

Transport by sea
No additional information available
Air transport
No additional information available

SECTION 15: Regulatory information
15.1. US Federal regulations
<table>
<thead>
<tr>
<th>Substance</th>
<th>TSCA Exemption/Exclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perfluorododecyl-1H,1H,2H,2H-triethoxysilane (853403-04-0)</td>
<td>CAUTION: This material is supplied for research and development purposes subject to the R&amp;D exemption under TSCA, 40 CFR 720.36, and must meet the requirements of the exemption, including supervision by a &quot;technically qualified individual&quot; as defined by 40 CFR 720.3(ee). The use of this material for &quot;commercial purposes&quot; as defined by 40 CFR 720.3(f) is not permitted in the United States.</td>
</tr>
<tr>
<td>Perfluorotetradecyl-1H,1H,2H,2H-triethoxysilane (885275-56-9)</td>
<td>Not listed on the United States TSCA (Toxic Substances Control Act) inventory</td>
</tr>
<tr>
<td>Other Fluorinated Alkyltriethoxysilanes (Not found)</td>
<td>Not listed on the United States TSCA (Toxic Substances Control Act) inventory</td>
</tr>
</tbody>
</table>
PERFLUORODODECYL-1H,1H,2H,2H-TRIETHOXYSILANE-
PERFLUOROTETRADECYL-1H,1H,2H,2H-TRIETHOXYSILANE
MIXTURE, 80%
Safety Data Sheet

15.2. International regulations

CANADA
No additional information available

EU-Regulations
No additional information available

National regulations
No additional information available

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:

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>H315</td>
<td>Causes skin irritation</td>
</tr>
<tr>
<td>H319</td>
<td>Causes serious eye irritation</td>
</tr>
</tbody>
</table>

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: 2 Moderate Hazard - Temporary or minor injury may occur
Flammability: 1 Slight Hazard - Materials that must be preheated before ignition will occur. Includes liquids, solids and semi solids having a flash point above 200 F. (Class IIIB)
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: 10/02/2015 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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