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

1.1. Product identifier

<table>
<thead>
<tr>
<th>Product form</th>
<th>Substance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Liquid</td>
</tr>
<tr>
<td>Substance name</td>
<td>(TRIDECAFLUORO-1,1,2,2-TETRAHYDROOCTYL)SILANE</td>
</tr>
<tr>
<td>Product code</td>
<td>SIT8173.0</td>
</tr>
<tr>
<td>Formula</td>
<td>C8H7F13Si</td>
</tr>
<tr>
<td>Synonyms</td>
<td>(PERFLUOROHEXYL)ETHYLSILANE</td>
</tr>
<tr>
<td>Chemical family</td>
<td>ORGANOSILANE</td>
</tr>
</tbody>
</table>

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

1.2.1. Relevant identified uses

| Use of the substance/mixture | Chemical intermediate |

1.2.2. Uses advised against

No additional information available

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

GELEST INC.
Fritz-Klatte-Strasse 8
65933 Frankfurt
Germany
T +49 (0) 69 3535106-500 - F +49 (0) 69 3535106-501 - (M-F): 8:00 AM - 4:00 PM
info@gelestde.com - www.gelestde.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

Classification according to Regulation (EC) No. 1272/2008 [CLP]
Flammable liquids, Category 3
H226

Full text of H statements : see section 16

Adverse physicochemical, human health and environmental effects

No additional information available

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

<table>
<thead>
<tr>
<th>Hazard pictograms (CLP)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Signal word (CLP)</td>
<td>Warning</td>
</tr>
<tr>
<td>Hazard statements (CLP)</td>
<td>H226 - Flammable liquid and vapour.</td>
</tr>
<tr>
<td>Precautionary statements (CLP)</td>
<td>P280 - Wear protective gloves/protective clothing/eye protection/face protection. P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P233 - Keep container tightly closed.</td>
</tr>
</tbody>
</table>
TRIDECAFLUORO-1,1,2,2-TETRAHYDROOCTYL)SILANE
Safety Data Sheet

2.3. Other hazards
No additional information available

SECTION 3: Composition/information on ingredients
3.1. Substances
Substance type: Mono-constituent
Name: (TRIDECAFLUORO-1,1,2,2-TETRAHYDROOCTYL)SILANE
CAS-No.: 469904-32-3

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>Classification according to Regulation (EC) No. 1272/2008 [CLP]</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Tridecafluoro-1,1,2,2-tetrahydrooctyl)silane</td>
<td>(CAS-No.) 469904-32-3</td>
<td>&gt; 95</td>
<td>Flam. Liq. 3, H226</td>
</tr>
</tbody>
</table>

Full text of 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 person to fresh air and keep comfortable for breathing. If you feel unwell, seek medical advice.

First-aid measures after skin contact: Wash with plenty of water/….

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, both acute and delayed
Symptoms/effects after inhalation: May cause irritation to the respiratory tract. Overexposure may cause: Cough. Headache. Nausea.

Symptoms/effects after skin contact: May cause skin irritation.

Symptoms/effects after eye contact: May cause eye irritation.

Symptoms/effects after ingestion: No information available.

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: None known.

5.2. Special hazards arising from the substance or mixture
Fire hazard: Flammable liquid and vapour. Irritating fumes and organic acid vapors may develop when material is exposed to elevated temperatures or open flame.

5.3. Advice for firefighters
Firefighting instructions: Use water spray or fog for cooling exposed containers. 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 vapour 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
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
Precautions for safe handling: Avoid all eye and skin contact and do not breathe vapour and mist. Containers and transfer lines require grounding during use. Provide good ventilation in process area to prevent formation of vapour. Use only outdoors or in a well-ventilated area. 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
Technical measures: Ground/bond container and receiving equipment. Proper grounding procedures to avoid static electricity should be followed. Use explosion-proof electrical equipment.

Storage conditions: Keep container tightly closed.


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
No additional information available

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

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 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: Clear liquid.
Molecular mass: 378.21 g/mol
Colour: No data available
(TRIDECAFLUORO-1,1,2,2-TETRAHYDROOCTYL)SILANE
Safety Data Sheet

Odour: Mild.
Odour threshold: No data available
Refractive index: 1.3184
pH: No data available
Relative evaporation rate (butylacetate=1): ~ 1
Melting point: No data available
Freezing point: < 0 °C
Boiling point: 75 °C @ 25 mm Hg
Flash point: > 27 °C
Auto-ignition temperature: No data available
Decomposition temperature: No data available
Flammability (solid, gas): Flammable liquid and vapour.
Vapour pressure: No data available
Relative vapour density at 20 °C: > 1
Relative density: 1.446
% Volatiles: > 95 %
Solubility: Insoluble in 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
Oxidising properties: No data available
Explosive 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
The product can generate small amounts of hydrogen when exposed to alkalis and protic materials such as water and alcohol in combination with metal salts such as aluminum chloride or precious metals such as platinum.

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
Skin corrosion/irritation: Not classified
Serious eye damage/irritation: Not classified
Respiratory or skin sensitisation: Not classified
Germ cell mutagenicity: Not classified
Carcinogenicity: Not classified
Reproductive toxicity: Not classified
STOT-single exposure: Not classified
STOT-repeated exposure: Not classified
Aspiration hazard: Not classified
(TRIDECAFLUORO-1,1,2,2-TETRAHYDROOCTYL)SILANE
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Symptoms/effects after inhalation: May cause irritation to the respiratory tract. Overexposure may cause: Cough. Headache. Nausea.
Symptoms/effects after skin contact: May cause skin irritation.
Symptoms/effects after eye contact: May cause eye irritation.
Symptoms/effects after ingestion: No information available.

SECTION 12: Ecological information
12.1. Toxicity
Acute aquatic toxicity: Not classified
Chronic aquatic toxicity: Not classified

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. Results of PBT and vPvB assessment
No additional information available

12.6. Other adverse effects
Other adverse effects: This substance may be hazardous to the environment.

SECTION 13: Disposal considerations
13.1. Waste treatment methods
Product/Packaging disposal recommendations: Incinerate. 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
In accordance with ADR / RID / IMDG / IATA / ADN

14.1. UN number
UN-No. (ADR) : 1993
UN-No. (IMDG) : 1993
UN-No. (IATA) : 1993
UN-No. (ADN) : 1993
UN-No. (RID) : 1993

14.2. UN proper shipping name
Proper Shipping Name (ADR) : FLAMMABLE LIQUID, N.O.S.
Proper Shipping Name (IMDG) : FLAMMABLE LIQUID, N.O.S.
Proper Shipping Name (IATA) : Flammable liquid, n.o.s.
Proper Shipping Name (ADN) : FLAMMABLE LIQUID, N.O.S.
Proper Shipping Name (RID) : FLAMMABLE LIQUID, N.O.S.
Transport document description (ADR) : UN 1993 FLAMMABLE LIQUID, N.O.S. ((TRIDECAFLUORO-1,1,2,2-TETRAHYDROOCTYL)SILANE), 3, II, (D/E)
Transport document description (IMDG) : UN 1993 FLAMMABLE LIQUID, N.O.S. ((TRIDECAFLUORO-1,1,2,2-TETRAHYDROOCTYL)SILANE), 3, II
Transport document description (IATA) : UN 1993 Flammable liquid, n.o.s. ((TRIDECAFLUORO-1,1,2,2-TETRAHYDROOCTYL)SILANE), 3, II
Transport document description (ADN) : UN 1993 FLAMMABLE LIQUID, N.O.S. ((TRIDECAFLUORO-1,1,2,2-TETRAHYDROOCTYL)SILANE), 3, II
Transport document description (RID) : UN 1993 FLAMMABLE LIQUID, N.O.S. ((TRIDECAFLUORO-1,1,2,2-TETRAHYDROOCTYL)SILANE), 3, II

14.3. Transport hazard class(es)
ADR
Transport hazard class(es) (ADR) : 3
Danger labels (ADR) : 3
### IMDG
Transport hazard class(es) (IMDG): 3
Danger labels (IMDG): 3

### IATA
Transport hazard class(es) (IATA): 3
Hazard labels (IATA): 3

### ADN
Transport hazard class(es) (ADN): 3
Danger labels (ADN): 3

### RID
Transport hazard class(es) (RID): 3
Danger labels (RID): 3

### 14.4. Packing group
- Packing group (ADR): II
- Packing group (IMDG): II
- Packing group (IATA): II
- Packing group (ADN): II
- Packing group (RID): II

### 14.5. Environmental hazards
- Dangerous for the environment: No
- Marine pollutant: No
- Other information: IMO IMDG- code: 3.2

### 14.6. Special precautions for user
- **Overland transport**
  - Classification code (ADR): F1
  - Special provisions (ADR): 274, 601, 640C
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Safety Data Sheet

Limited quantities (ADR) : 1L
Excepted quantities (ADR) : E2
Packing instructions (ADR) : P001
Mixed packing provisions (ADR) : MP19
Portable tank and bulk container instructions (ADR) : T7
Portable tank and bulk container special provisions (ADR) : TP1, TP8, TP28
Tank code (ADR) : L1.5BN
Vehicle for tank carriage : FL
Transport category (ADR) : 2
Special provisions for carriage - Operation (ADR) : S2, S20
Hazard identification number (Kemler No.) : 33
Orange plates :

Tunnel restriction code (ADR) : D/E

- Transport by sea
Special provisions (IMDG) : 274
Limited quantities (IMDG) : 1 L
Excepted quantities (IMDG) : E2
Packing instructions (IMDG) : P001
IBC packing instructions (IMDG) : IBC02
Tank instructions (IMDG) : T7
Tank special provisions (IMDG) : TP1, TP8, TP28
EmS-No. (Fire) : F-E
EmS-No. (Spillage) : S-E
Stowage category (IMDG) : B

- Air transport
PCA Excepted quantities (IATA) : E2
PCA Limited quantities (IATA) : Y341
PCA limited quantity max net quantity (IATA) : 1L
PCA packing instructions (IATA) : 353
PCA max net quantity (IATA) : 5L
CAO packing instructions (IATA) : 364
CAO max net quantity (IATA) : 60L
Special provisions (IATA) : A3
ERG code (IATA) : 3H

- Inland waterway transport
Classification code (ADN) : 274, 601, 640C
Special provisions (ADN) : 274, 601, 640C
Limited quantities (ADN) : 1 L
Excepted quantities (ADN) : E2
Carriage permitted (ADN) : T
Equipment required (ADN) : PP, EX, A
Ventilation (ADN) : VE01
Number of blue cones/lights (ADN) : 1

- Rail transport
Classification code (RID) : F1
Special provisions (RID) : 274, 601, 640C
Limited quantities (RID) : 1L
Excepted quantities (RID) : E2
Packing instructions (RID) : P001
Mixed packing provisions (RID) : MP19
(TRIDECAFLUORO-1,1,2,2-TETRAHYDROOCTYL)SILANE
Safety Data Sheet

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code
Not applicable

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

15.1.1. EU-Regulations

No REACH Annex XVII restrictions

(TRIDECAFLUORO-1,1,2,2-TETRAHYDROOCTYL)SILANE is not on the REACH Candidate List

(TRIDECAFLUORO-1,1,2,2-TETRAHYDROOCTYL)SILANE is not on the REACH Annex XIV List

(TRIDECAFLUORO-1,1,2,2-TETRAHYDROOCTYL)SILANE is not subject to REGULATION (EU) No 649/2012 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 4 July 2012 concerning the export and import of hazardous chemicals.


% Volatiles : > 95 %

15.1.2. National regulations

Germany
12th Ordinance Implementing the Federal Immission Control Act - 12.BImSchV : Is not subject of the 12. BlmSchV (Hazardous Incident Ordinance)

Netherlands
SZW-lijst van kankerverwekkende stoffen : The substance is not listed
SZW-lijst van mutagene stoffen : The substance is not listed
NIET-limiteerbare lijst van voor de voortplanting giftige stoffen – Borstvoeding : The substance is not listed
NIET-limiteerbare lijst van voor de voortplanting giftige stoffen – Vruchtbaarheid : The substance is not listed
NIET-limiteerbare lijst van voor de voortplanting giftige stoffen – Ontwikkeling : The substance is not listed

Denmark
Classification remarks : Emergency management guidelines for the storage of flammable liquids must be followed

15.2. Chemical safety assessment

No additional information available

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

Other information : Prepared by safety and environmental affairs.

Full text of H- and EUH-statements:

Flam. Liq. 3 Flammable liquids, Category 3
H226 Flammable liquid and vapour.
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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