

**1,1,3,3,5,5-HEXAMETHYLCYCLOTRISILAZANE**

Safety Data Sheet SIH6102.0

Date of issue: 01/06/2015

Revision date: 01/08/2016

Version: 2.0

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1. Product identifier**

| | |
|-----------------|--|
| Product form | : Substance |
| Physical state | : Liquid |
| Substance name | : 1,1,3,3,5,5-HEXAMETHYLCYCLOTRISILAZANE |
| Product code | : SIH6102.0 |
| Formula | : C ₆ H ₂₁ N ₃ Si ₃ |
| Synonyms | : HEXAMETHYLCYCLOTRISILAZANE; 2,2,4,4,6,6-HEXAMETHYLCYCLOTRISILAZANE |
| Chemical family | : ORGANOSILANE |

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

| | |
|------------------------------|---|
| Use of the substance/mixture | : Chemical intermediate For research and industrial use only |
|------------------------------|---|

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**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****GHS-US classification**

| | |
|---------------------|------|
| Flam. Liq. 4 | H227 |
| Acute Tox. 4 (Oral) | H302 |
| Skin Irrit. 2 | H315 |
| Eye Irrit. 2A | H319 |
| STOT SE 3 | H335 |

Full text of H-phrases: see section 16

2.2. Label elements**GHS-US labeling**

Hazard pictograms (GHS-US)



GHS07

Signal word (GHS-US)

: Warning

Hazard statements (GHS-US)

: H227 - Combustible liquid
H302 - Harmful if swallowed
H315 - Causes skin irritation
H319 - Causes serious eye irritation
H335 - May cause respiratory irritation

Precautionary statements (GHS-US)

: P280 - Wear protective gloves/protective clothing/eye protection/face protection
P312 - Call a doctor if you feel unwell
P210 - Keep away from heat, open flames, sparks. - No smoking
P261 - Avoid breathing vapors
P264 - Wash hands thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P271 - Use only outdoors or in a well-ventilated area
P330 - Rinse mouth
P301+P312 - If swallowed: Call a doctor if you feel unwell
P302+P352 - If on skin: Wash with plenty of water
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
P321 - Specific treatment (see first aid instructions on this label)

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P332+P313 - If skin irritation occurs: Get medical advice/attention
P337+P313 - If eye irritation persists: Get medical advice/attention
P362+P364 - Take off contaminated clothing and wash it 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
P501 - Dispose of contents/container to licensed waste disposal facility.

2.3. Other hazards

Other hazards not contributing to the classification : This compound reacts with moisture in living tissue to generate ammonia. The US ACGIH (TWA) for ammonia is 25 ppm.

2.4. Unknown acute toxicity (GHS US)

No data available

SECTION 3: Composition/Information on ingredients

3.1. Substance

Substance type : Mono-constituent
Name : 1,1,3,3,5,5-HEXAMETHYLCYCLOTRISILAZANE
CAS No : 1009-93-4
EC no : 213-773-6

| Name | Product identifier | % | GHS-US classification |
|--|--------------------|------|--|
| 1,1,3,3,5,5-Hexamethylcyclotrisilazane | (CAS No) 1009-93-4 | > 95 | Flam. Liq. 4, H227 Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 STOT SE 3, H335 |

3.2. Mixture

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. 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 : Rinse cautiously with water for several 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. Obtain emergency medical attention.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries after inhalation : May cause respiratory irritation.
Symptoms/injuries after skin contact : Causes skin irritation.
Symptoms/injuries after eye contact : Causes serious eye irritation.
Symptoms/injuries after ingestion : Harmful if swallowed. Swallowing a small quantity of this material will result in serious health hazard.

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Water spray. Foam. Carbon dioxide. Dry chemical.
Unsuitable extinguishing media : Do not use straight streams.

5.2. Special hazards arising from the substance or mixture

Fire hazard : Combustible liquid. Irritating fumes and organic acid vapors may develop when material is exposed to elevated temperatures or open flame. Liquid generates strong static charge when poured.

5.3. Advice for firefighters

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.

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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.

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, open flames, sparks. - No smoking.

Precautions for safe handling : Avoid all eye and skin contact and do not breathe vapor and mist. Ground/bond container and receiving equipment. Use only outdoors or in a well-ventilated area.

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 : Acids. Alcohols. Oxidizing agent. Peroxides. Moisture. Water.

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 - amine gas (brown 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 : 219.51 g/mol

Color : No data available

Odor : Ammonia.

Odor threshold : No data available

Refractive index : 1.4448

pH : No data available

Relative evaporation rate (butyl acetate=1) : No data available

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| | |
|---------------------------------|--|
| Melting point | : No data available |
| Freezing point | : -10 °C |
| Boiling point | : 186 - 188 °C |
| Flash point | : 61 °C |
| Auto-ignition temperature | : No data available |
| Decomposition temperature | : No data available |
| Flammability (solid, gas) | : Combustible liquid |
| Vapor pressure | : < 10 mm Hg @ 20°C |
| Relative vapor density at 20 °C | : > 1 |
| Relative density | : 0.922 |
| Solubility | : Insoluble in water. Reacts with water. |
| Log Pow | : No data available |
| Log Kow | : No data available |
| Viscosity, kinematic | : 1.7 cSt @ 20°C |
| 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 in a cool place.

10.3. Possibility of hazardous reactions

Reacts with water and moisture in air, liberating ammonia.

10.4. Conditions to avoid

Heat. Sparks. Open flame.

10.5. Incompatible materials

Acids. Alcohols. Oxidizing agent. Peroxides. Moisture. Water.

10.6. Hazardous decomposition products

Ammonia. Organic acid vapors.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Oral: Harmful if swallowed.

| 1,1,3,3,5,5-HEXAMETHYLCYCLOTRISILAZANE (1009-93-4) | |
|--|---------------------------|
| LD50 oral rat | 500 mg/kg |
| ATE US (oral) | 500.000 mg/kg body weight |
| 1,1,3,3,5,5-Hexamethylcyclotrisilazane (1009-93-4) | |
| LD50 oral rat | 500 mg/kg |
| ATE US (oral) | 500.000 mg/kg body weight |

| | |
|--|-------------------------------------|
| 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) | : May cause respiratory irritation. |
| Specific target organ toxicity (repeated exposure) | : Not classified |
| Aspiration hazard | : Not classified |
| Symptoms/injuries after inhalation | : May cause respiratory irritation. |
| Symptoms/injuries after skin contact | : Causes skin irritation. |

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| | |
|-------------------------------------|--|
| Symptoms/injuries after eye contact | : Causes serious eye irritation. |
| Symptoms/injuries after ingestion | : Harmful if swallowed. Swallowing a small quantity of this material will result in serious health hazard. |
| 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 ozone layer | : No additional information available |
| Effect on the global warming | : No known ecological damage caused by this product. |

SECTION 13: Disposal considerations

13.1. Waste treatment methods

| | |
|---------------------------------|--|
| Sewage disposal recommendations | : Do not dispose of waste into sewer. |
| Waste 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

DOT NA no. NA1993

14.2. UN proper shipping name

| | |
|---|--|
| Proper Shipping Name (DOT) | : Combustible liquid, n.o.s. (1,1,3,3,5,5-HEXAMETHYLCYCLOTRISILAZANE) |
| Transport hazard class(es) (DOT) | : 3 - Class 3 - Flammable and combustible liquid 49 CFR 173.120 |
| DOT Symbols | : D - Proper shipping name for domestic use only, or to and from Canada, G - Identifies PSN requiring a technical name |
| Packing group (DOT) | : III - Minor Danger |
| DOT Packaging Exceptions (49 CFR 173.xxx) | : 150 |
| DOT Packaging Non Bulk (49 CFR 173.xxx) | : 203 |
| DOT Packaging Bulk (49 CFR 173.xxx) | : 241 |

14.3. Additional information

| | |
|-------------------------------|---|
| Other information | : No supplementary information available. |
| Special transport precautions | : This product is Combustible as defined by the US Department of Transportation (DOT). It is regulated for transport in the US in container > 119 gallons. The product is not regulated for transport by the IATA, ADR/RID, ADNR or the IMDG regulations. |

Transport by sea

| | |
|-----------------------------|---|
| DOT Vessel Stowage Location | : A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel. |
|-----------------------------|---|

Air transport

| | |
|--|---------|
| DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) | : 60 L |
| DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) | : 220 L |

SECTION 15: Regulatory information

15.1. US Federal regulations

1,1,3,3,5,5-Hexamethylcyclotrisilazane (1009-93-4)

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

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15.2. International regulations

1,1,3,3,5,5-Hexamethylcyclotrisilazane (1009-93-4)

Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on the Canadian NDSL (Non-Domestic Substances List)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on the Japanese ISHL (Industrial Safety and Health Law)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)

15.3. US State regulations

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| | |
|---|----|
| U.S. - California - Proposition 65 - Carcinogens List | No |
| U.S. - California - Proposition 65 - Developmental Toxicity | No |
| U.S. - California - Proposition 65 - Reproductive Toxicity - Female | No |
| U.S. - California - Proposition 65 - Reproductive Toxicity - Male | No |

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| U.S. - California - Proposition 65 - Carcinogens List | U.S. - California - Proposition 65 - Developmental Toxicity | U.S. - California - Proposition 65 - Reproductive Toxicity - Female | U.S. - California - Proposition 65 - Reproductive Toxicity - Male | Non-significant risk level (NSRL) |
|---|---|---|---|-----------------------------------|
| No | No | No | No | |

SECTION 16: Other information

Indication of changes : Applied changes to section 4.

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.

Full text of H-phrases::

| | |
|---------------------|---|
| Acute Tox. 4 (Oral) | Acute toxicity (oral) Category 4 |
| Eye Irrit. 2A | Serious eye damage/eye irritation Category 2A |
| Flam. Liq. 4 | Flammable liquids Category 4 |
| Skin Irrit. 2 | Skin corrosion/irritation Category 2 |
| STOT SE 3 | Specific target organ toxicity (single exposure) Category 3 |
| H227 | Combustible liquid |
| H302 | Harmful if swallowed |
| H315 | Causes skin irritation |
| H319 | Causes serious eye irritation |
| H335 | May cause respiratory irritation |

HMIS III Rating

Health : 2 Moderate Hazard - Temporary or minor injury may occur
Flammability : 2 Moderate Hazard
Physical : 1 Slight Hazard

Prepared by safety and environmental affairs.

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SDS US (GHS HazCom 2012) - Custom

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

01/08/2016

EN (English US)

SDS ID: SIH6102.0

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