

**1,1,1,3,3,3-HEXAMETHYLDISILAZANE**

Safety Data Sheet SIH6110.0

Date of issue: 01/06/2015

Revision date: 08/28/2015

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	: 1,1,1,3,3,3-HEXAMETHYLDISILAZANE
Product code	: SIH6110.0
Formula	: C6H19NSi2
Synonyms	: HMDS; HMDZ; BIS(TRIMETHYLSILYL)AMINE
Chemical family	: ORGANOAMINOSILANE

**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
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**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](mailto:info@gelest.com) - [www.gelest.com](http://www.gelest.com)
**1.4. Emergency telephone number**

Emergency number	: CHEMTREC: 1-800-424-9300 (USA); +1 703-527-3887 (International)
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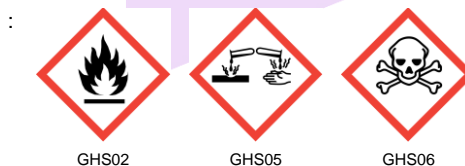
**SECTION 2: Hazards identification****2.1. Classification of the substance or mixture****Classification (GHS-US)**

Flam. Liq. 2	H225
Acute Tox. 4 (Oral)	H302
Acute Tox. 3 (Dermal)	H311
Acute Tox. 3 (Inhalation:vapour)	H331
Skin Corr. 1B	H314
Eye Dam. 1	H318

Full text of H-phrases: see section 16

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

Hazard pictograms (GHS-US)



GHS02

GHS05

GHS06

Signal word (GHS-US)

: Danger

Hazard statements (GHS-US)

: H225 - Highly flammable liquid and vapor  
H302 - Harmful if swallowed  
H311+H331 - Toxic in contact with skin or if inhaled  
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  
P210 - Keep away from heat, open flames, sparks. - No smoking  
P233 - Keep container tightly closed  
P240 - Ground/bond container and receiving equipment  
P241 - Use explosion-proof electrical equipment  
P242 - Use only non-sparking tools  
P243 - Take precautionary measures against static discharge  
P370+P378 - In case of fire: Use water spray, foam, carbon dioxide, dry chemical to extinguish  
P260 - Do not breathe vapors  
P270 - Do not eat, drink or smoke when using this product  
P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing  
P301+P330+P331 - If swallowed: rinse mouth. Do NOT induce vomiting  
P301+P312 - If swallowed: Call a doctor if you feel unwell

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P303+P361+P353 - If on skin (or hair): take off immediately all contaminated clothing. rinse skin with water/shower  
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
P264 - Wash hands thoroughly after handling  
P361 - Take off immediately all contaminated clothing  
P363 - Wash contaminated clothing before reuse  
P271 - Use only outdoors or in a well-ventilated area  
P403+P235 - Keep in a cool place  
P405 - Store locked up  
P501 - Dispose of contents/container to licensed waste disposal facility.  
P330 - Rinse mouth

### 2.3. Other hazards

Other hazards not contributing to the classification : Hexamethyldisilazane reacts with moisture in living tissue to generate ammonia.

### 2.4. Unknown acute toxicity (GHS US)

No data available

## SECTION 3: Composition/information on ingredients

### 3.1. Substance

Substance type : Mono-constituent  
Name : 1,1,1,3,3,3-HEXAMETHYLDISILAZANE  
CAS No : 999-97-3  
EC no : 213-668-5

Name	Product identifier	%	Classification (GHS-US)
Hexamethyldisilazane	(CAS No) 999-97-3	95 - 100	Flam. Liq. 2, H225 Acute Tox. 4 (Oral), H302 Acute Tox. 3 (Dermal), H311 Acute Tox. 3 (Inhalation:vapour), H331 Skin Corr. 1B, H314

### 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. Immediately call a poison center or doctor/physician.

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. Call a POISON CENTER or doctor/physician if you feel unwell.

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

Symptoms/injuries : Causes severe skin burns and eye damage.

Symptoms/injuries after inhalation : Toxic if inhaled. Danger of serious damage to health by prolonged exposure through inhalation. May cause irritation to the respiratory tract. Overexposure may cause: Nausea. Coughing. Headache.

Symptoms/injuries after skin contact : Toxic in contact with skin. Repeated exposure to this material can result in absorption through skin causing significant health hazard. Causes (severe) skin burns.

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

Symptoms/injuries after ingestion : 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.

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### 5.2. Special hazards arising from the substance or mixture

- Fire hazard : Highly flammable liquid and vapor. 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.
- Explosion hazard : May form flammable/explosive vapor-air mixture.

### 5.3. Advice for firefighters

- 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 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

- General measures : Remove ignition sources. Use special care to avoid static electric charges.

#### 6.1.1. For non-emergency personnel

- Emergency procedures : Evacuate unnecessary personnel.

#### 6.1.2. For emergency responders

- Protective equipment : Equip cleanup crew with proper 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 : Hexamethyldisilazane is known to have an exceptional tendency to accumulate static charge. Human fatality has been reported from fires ignited by static discharge of hexamethyldisilazane. The user must take extreme care to dissipate static charge by grounding of all equipment involved in liquid transfer. Handle empty containers with care because residual vapors are flammable.
- Precautions for safe handling : Containers must be properly grounded before beginning transfer. Take precautionary measures against static discharge. Provide good ventilation in process area to prevent accumulation of vapors. Use only non-sparking tools. Use only outdoors or in a well-ventilated area. Do not breathe vapors.
- Hygiene measures : Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling. Wash contaminated clothing before reuse.

### 7.2. Conditions for safe storage, including any incompatibilities

- Technical measures : Proper grounding procedures to avoid static electricity should be followed. Ground/bond container and receiving equipment. Use explosion-proof electrical equipment. Comply with applicable regulations.
- Storage conditions : Keep container tightly closed.
- Incompatible materials : Acids. Alcohols. Oxidizing agent. Peroxides. Moisture. Water.
- Storage area : Store in a cool 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

#### Hexamethyldisilazane (999-97-3)

USA OSHA	OSHA PEL (TWA) (ppm)	35 ppm (ammonia)
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### 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 or face shield. Contact lenses should not be worn.

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Skin and body protection	: Wear suitable protective clothing.
Respiratory protection	: 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	: 161.39 g/mol
Color	: Colorless.
Odor	: Ammonia.
Odor threshold	: No data available
Refractive index	: 1.4080
pH	: No data available
Relative evaporation rate (butyl acetate=1)	: ~ 1
Melting point	: < -76 °C
Freezing point	: No data available
Boiling point	: 126 - 127 °C
Flash point	: 12 °C
Auto-ignition temperature	: 325 °C
Decomposition temperature	: No data available
Flammability (solid, gas)	: Highly flammable liquid and vapor
Vapor pressure	: 50 mm Hg @ 50°C
Relative vapor density at 20 °C	: > 1
Relative density	: 0.7742
VOC content	: 100 %
Solubility	: Insoluble in water. Reacts with water.
Log Pow	: No data available
Log Kow	: No data available
Viscosity, kinematic	: 0.90 cSt
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available
Explosion limits	: 0.3 - 41 vol %

#### 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. Open flame. Sparks.

#### 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. Dermal: Toxic in contact with skin. Inhalation:vapour: Toxic if inhaled.
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1,1,1,3,3,3-HEXAMETHYLDISILAZANE (999-97-3)	
ATE US (oral)	500.000 mg/kg body weight
ATE US (dermal)	300.000 mg/kg body weight

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ATE US (vapors)	3.000 mg/l/4h
Hexamethyldisilazane (999-97-3)	
LD50 oral rat	850 mg/kg
LD50 dermal rabbit	540 mg/kg
LC50 inhalation rat (mg/l)	8.7 mg/l (Exposure time: 4 h)
LDLo intraperitoneal rat	650 mg/kg
ATE US (oral)	847.000 mg/kg body weight
ATE US (dermal)	540.000 mg/kg body weight
ATE US (vapors)	8.700 mg/l/4h
ATE US (dust, mist)	8.700 mg/l/4h

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 Bacterial reverse mutation test (Ames) is negative (non-mutagenic).
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	: Harmful if swallowed. Toxic in contact with skin. Toxic if inhaled.
Symptoms/injuries after inhalation	: Toxic if inhaled. Danger of serious damage to health by prolonged exposure through inhalation. May cause irritation to the respiratory tract. Overexposure may cause: Nausea. Coughing. Headache.
Symptoms/injuries after skin contact	: Toxic in contact with skin. Repeated exposure to this material can result in absorption through skin causing significant health hazard. Causes (severe) skin burns.
Symptoms/injuries after eye contact	: Causes serious eye damage.
Symptoms/injuries after ingestion	: Swallowing a small quantity of this material will result in serious health hazard.

## SECTION 12: Ecological information

### 12.1. Toxicity

Hexamethyldisilazane (999-97-3)	
LC50 fish 1	167 mg/l (Exposure time: 96 h - Species: Pimephales promelas [static])
EC50 Daphnia 1	186 mg/l (Exposure time: 48 h - Species: Daphnia magna)

### 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

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

Waste disposal recommendations	: Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to licensed waste disposal facility.
Additional information	: Handle empty containers with care because residual vapors are flammable.
Ecology - waste materials	: Avoid release to the environment.

## SECTION 14: Transport information

### 14.1. UN number

UN-No.(DOT)	: 3286
DOT NA no.	UN3286

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### 14.2. UN proper shipping name

Proper Shipping Name (DOT) : FLAMMABLE LIQUID, TOXIC, CORROSIVE, N.O.S.  
(1,1,1,3,3,3-HEXAMETHYLDISILAZANE)

Department of Transportation (DOT) Hazard Classes : 3 - Class 3 - Flammable and combustible liquid 49 CFR 173.120

Hazard labels (DOT) : 3 - Flammable liquid  
6.1 - Poison  
8 - Corrosive



DOT Symbols : G - Identifies PSN requiring a technical name

Packing group (DOT) : II - Medium Danger

DOT Packaging Exceptions (49 CFR 173.xxx) : 150

DOT Packaging Non Bulk (49 CFR 173.xxx) : 202

DOT Packaging Bulk (49 CFR 173.xxx) : 243

### 14.3. Additional information

Other information : No supplementary information available.

### Transport by sea

DOT Vessel Stowage Location : B - (i) The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers, or one passenger per each 3 m of overall vessel length; and (ii) "On deck only" on passenger vessels in which the number of passengers specified in paragraph (k)(2)(i) of this section is exceeded.

DOT Vessel Stowage Other : 21 - Segregation same as for flammable liquids, 40 - Stow "clear of living quarters", 100 - Stow "away from" flammable solids

### Air transport

DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : 1 L

DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 5 L

## SECTION 15: Regulatory information

### 15.1. US Federal regulations

#### Hexamethyldisilazane (999-97-3)

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

### 15.2. International regulations

#### Hexamethyldisilazane (999-97-3)

Listed on the AICS (Australian Inventory of Chemical Substances)  
Listed on the Canadian DSL (Domestic Substances List)  
Listed on the 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 Korean ECL (Existing Chemicals List)  
Listed on NZIoC (New Zealand Inventory of Chemicals)  
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)  
Listed on INSQ (Mexican national Inventory of Chemical Substances)

### 15.3. US State regulations

#### 1,1,1,3,3,3-HEXAMETHYLDISILAZANE(999-97-3)

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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Hexamethyldisilazane (999-97-3)				
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	No significance risk level (NSRL)
No	No	No	No	

### 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.

#### Full text of H-phrases::

Acute Tox. 3 (Dermal)	Acute toxicity (dermal) Category 3
Acute Tox. 3 (Inhalation:vapour)	Acute toxicity (inhalation:vapor) Category 3
Acute Tox. 4 (Oral)	Acute toxicity (oral) Category 4
Eye Dam. 1	Serious eye damage/eye irritation Category 1
Flam. Liq. 2	Flammable liquids Category 2
Skin Corr. 1B	Skin corrosion/irritation Category 1B
H225	Highly flammable liquid and vapor
H302	Harmful if swallowed
H311	Toxic in contact with skin
H314	Causes severe skin burns and eye damage
H318	Causes serious eye damage
H331	Toxic if inhaled

#### HMIS III Rating

Health : 3 Serious Hazard - Major injury likely unless prompt action is taken and medical treatment is given  
Flammability : 4 Severe 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

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