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## Safety Data Sheet

From: High Purity Products  
14157 NE Airport Way  
Portland, OR 97230

EMERGENCY TELEPHONE NUMBER  
24 hour Emergency Telephone Number:  
CHEMTREC 1-800-424-9300

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# HEXAMETHYLDISILAZANE

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## 1. Product Identification

Synonyms: HMDS

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## 2. Hazard Identification

OSHA defined hazards: Not classified.

Label Elements:



Signal Word: Danger

**Hazard Statement:** Highly flammable liquid and vapor. Harmful if swallowed. Toxic in contact with skin. Harmful if inhaled. Causes severe skin burns and eye damage.

**Precautionary statement**

**Prevention:** Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Use only outdoors or in a well-ventilated area. Wear protective

gloves/protective clothing/eye protection/face protection. Do not breathe mist. Do not eat, drink or smoke when using this product. Wash thoroughly after handling.

**Response:** If swallowed: Rinse mouth. Do NOT induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse. If inhaled: Remove person to fresh air and keep comfortable for breathing. Immediately call a poison center/doctor. In case of fire: Use foam, carbon dioxide, dry powder or water fog for extinction. Remove/Take off immediately all contaminated clothing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

**Storage:** Store in a well-ventilated place. Keep container tightly closed. Keep cool. Store locked up.

**Disposal:** Dispose of contents/container in accordance with local/regional/national/international regulations.

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### 3. Composition/information on ingredients

Ingredient	CAS No	Percent
----- Hexamethyldisilazane	----- 999-97-3	----- 100%

**Composition comments:** All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

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### 4. First-Aid measures

**Inhalation:** Move injured person into fresh air and keep person calm under observation. Get medical attention immediately.

**Skin contact:** Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention immediately. Chemical burns must be treated by a physician.

**Eye contact:** Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Hold eyelids apart. Continue rinsing. Get medical attention immediately.

**Ingestion:** Rinse mouth thoroughly with water and give large amounts of milk or water to people not unconscious. Do not induce vomiting. If vomiting occurs, the head should be kept low so that stomach vomit doesn't enter the lungs. Obtain medical attention and take along these instructions.

**General information:** In the case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). If the heart has stopped, trained personnel should begin cardiopulmonary resuscitation immediately. In case of shortness of breath, give oxygen. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Wash contaminated clothing before reuse. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Thermal burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital.

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### 5. Fire-Fighting Measures

**Suitable extinguishing media:** The product is highly flammable, and explosive vapor/air mixtures may be formed even at normal room temperatures. Fire can be extinguished using: Alcohol foam. Carbon dioxide (CO<sub>2</sub>).

**Unsuitable extinguishing media:** Water. Dry chemical.

**Specific hazards arising from the chemical:** Water reactive material. Material slowly generates ammonia on contact with water or moisture. By heating and fire, toxic and corrosive vapors/gases may be formed. Solvent vapors may form explosive mixtures with air.

**Special protective equipment and precautions for firefighters:** Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. Structural firefighter's protective clothing will only provide limited protection. Selection of respiratory protection for firefighting: follow the general fire precautions indicated in the workplace. Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

**Fire-fighting equipment/instructions:** In case of fire and/or explosion do not breathe fumes. Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask. If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also consider initial evacuation for 800 meters (1/2 mile) in all directions. ALWAYS stay away from tanks engulfed in flame. Withdraw immediately in case of rising sound from venting safety devices or any discoloration of tanks due to fire. Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Move containers from fire area if you can do it without risk. Move containers from fire area if you can do so without risk. For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply.

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## 6. Accidental Release Measures

### **Personal precautions, protective equipment and emergency procedures:**

Use personal protection as recommended in Section 8 of the SDS. Keep unnecessary personnel away. Local authorities should be advised if significant spillages cannot be contained. Avoid any exposure. Stay upwind. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering. Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Ventilate.

**Methods and materials for containment and cleaning up:** Should not be released into the environment.

*Large Spills:* Dike the spilled material, where this is possible. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal.

*Small Spills:* Absorb spill with vermiculite or other inert material. Clean contaminated surface thoroughly. Avoid dust formation. After removal flush contaminated area thoroughly with water.

Never return spills in original containers for re-use.

**Environmental precautions:** Prevent further leakage or spillage if safe to do so. Do not contaminate water.

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## 7. Handling and Storage

**Precautions for safe handling:** Do not handle or store near an open flame, heat or other sources of ignition. Do not smoke. Take precautionary measures against static discharges. All equipment used

when handling the product must be grounded. Use non-sparking tools and explosion-proof equipment. Avoid any exposure. Use only with adequate ventilation. Handle and open container with care. The product is highly flammable and may be ignited even after short contact with an ignition source. Vapors are heavier than air and may travel along the floor and in the bottom of containers. Vapors may be ignited by a spark, a hot surface or an ember. Use Personal Protective Equipment recommended in section 8 of the SDS.

**Conditions for safe storage, including any incompatibilities:** Follow rules for flammable liquids. Keep away from heat, sparks and open flame. Keep away from sources of ignition - No smoking. Store in a cool place. Keep in a well-ventilated place. Keep container tightly closed. Avoid contact with moist air. Keep this material away from food, drink and animal feed.

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## 8. Exposure Controls/Personal Protection

**Occupational exposure limits:** No exposure limits noted for ingredient(s).

**Biological limit values:** No biological exposure limits noted for the ingredient(s).

**Appropriate engineering controls:** Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Eye wash facilities and emergency shower must be available when handling this product.

### *Individual protection measures, such as personal protective equipment*

**Eye/face protection:** Wear eye/face protection. Wear approved safety glasses or goggles.

**Skin/Hand protection:** Wear protective gloves. Be aware that the liquid may penetrate the gloves. Frequent change is advisable. Suitable gloves can be recommended by the glove supplier.

**Other:** Wear appropriate chemical resistant clothing. Wear appropriate chemical resistant gloves. Protective shoes or boots. Structural firefighter's protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations. Wear chemical protective equipment that is specifically recommended by the Personal Protective Equipment manufacturer.

**Respiratory protection:** Wear appropriate NIOSH respirator when ventilation is inadequate and occupational exposure limits are exceeded.

**Thermal hazards:** Wear appropriate thermal protective clothing, when necessary.

**General hygiene considerations:** When using, do not eat, drink or smoke. Remove and isolate contaminated clothing and shoes. Wash hands before breaks and immediately after handling the product. Handle in accordance with good industrial hygiene and safety practice. Launder contaminated clothing before reuse.

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## 9. Physical and Chemical Properties

**Appearance:** Colorless liquid.

**Physical state:** Liquid.

**Form:** Liquid.

**Color:** Colorless.

**Odor:** Ammonia.

**Odor threshold:** Not available.

**pH:** Not available.

**Melting point/freezing point:** < -108.4 °F (< -78 °C)

**Initial boiling point and boiling range:** 257 °F (125 °C)

**Flash point:** 55.4 °F (13.0 °C)

**Flammability (solid, gas):** Not available.  
*Upper/lower flammability or explosive limits*  
**Flammability limit – lower (%):** > 0.3  
**Flammability limit – upper (%):** < 41  
**Explosive limit - lower (%):** Not available.  
**Explosive limit - upper (%):** Not available.  
**Vapor pressure:** 1.84 kPa at 25 °C  
**Vapor density:** Vapors are heavier than air.  
**Relative density:** Not available.  
**Solubility(ies):** Hydrolyses  
**Partition coefficient (n-octanol/water):** No data available.  
**Auto-ignition temperature:** 325  
**Decomposition temperature:** Not available.  
*Other information*  
**Density:** 0.77 g/cm<sup>3</sup>  
**Molecular formula:** C<sub>6</sub>H<sub>19</sub>NSi<sub>2</sub>  
**Molecular weight:** 161.4 g/mol

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## 10. Stability and Reactivity

**Reactivity:** Water reactive material.  
**Chemical stability:** Water reactive material. Risk of ignition. Stable at normal conditions.  
**Possibility of hazardous reactions:** Material slowly generates ammonia on contact with water or moisture.  
**Conditions to avoid:** Heat, sparks, flames. Water, moisture.  
**Incompatible materials:** Strong oxidizing agents. Strong acids. Amines. Alcohols.  
**Hazardous decomposition products:** Carbon oxides. Ammonia. Nitrogen oxides (NO<sub>x</sub>). Silicon dioxide.

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## 11. Toxicological Information

### *Information on likely routes of exposure*

**Ingestion:** Causes digestive tract burns. May cause burns of the gastrointestinal tract if swallowed. Harmful if swallowed.

**Inhalation:** Harmful if inhaled. In high concentrations, vapors may irritate throat and respiratory system and cause coughing.

**Skin contact:** Toxic in contact with skin. Causes severe skin burns. Causes permanent skin damage (scarring).

**Eye contact:** Causes severe eye burns. Causes permanent eye injury.

**Symptoms related to the physical, chemical and toxicological characteristics:** Causes skin and eye burns.

### *Information on toxicological effects*

**Acute toxicity** Toxic in contact with skin. Harmful if swallowed. Harmful if inhaled.

<b>Product</b>	<b>Species</b>	<b>Test Results</b>
Hexamethyldisilazane (HMDS) (CAS 999-97-3)		
<b>Acute</b>		
<i>Dermal</i>		
LD50	Rabbit	0.71 ml/kg
<i>Inhalation</i>		
LC50	Rat	8.7 mg/l, 4 Hours
<i>Oral</i>		
LD50	Rat	847 mg/kg

**Skin corrosion/irritation:** Causes severe skin burns.

**Serious eye damage/eye irritation:** Causes serious eye damage.

**Respiratory sensitization:** Not classified.

**Skin sensitization:** Not a skin sensitizer.

**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.

**Chronic effects:** Not classified.

**Further information:** None known.

## 12. Ecological Information

**Eco toxicity:** Harmful to aquatic life with long lasting effects.

<b>Product</b>	<b>Species</b>	<b>Test Results</b>
Hexamethyldisilazane (HMDS) (CAS 999-97-3)		
<b>Aquatic</b>		
Fish LC50	Fathead minnow ( <i>Pimephales promelas</i> )	79 mg/l, 96 hours

**Persistence and degradability:** No data available.

**Bioaccumulative potential:** No data available.

**Mobility in soil:** No data available.

**Mobility in general:** Water reactive material.

**Other adverse effects:** None known.

## 13. Disposal Considerations

**Disposal instructions:** Dispose of this material and its container at hazardous or special waste collection point. Do not allow this material to drain into sewers/water supplies. Dispose of contents/container in accordance with local/regional/national/international regulations. Dispose in accordance with all applicable regulations.

**Hazardous waste code:** Waste codes should be assigned by the user based on the application for which the product was used.

**Waste from residues / unused products:** Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

**Contaminated packaging:** Dispose of in accordance with local regulations.

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## 14. Transport Information

### DOT

**UN number:** UN3286

**UN proper shipping name:** Flammable liquid, toxic, corrosive, n.o.s. (Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)-)

**Transport hazard class(es):** 3

**Subsidiary class(es):** 6.1, 8

**Packing group:** II

**Marine pollutant:** No

**Special provisions:** IB2, T11, TP2, TP13, TP27

**Packaging exceptions:** 150

**ERG number:** 131

### IATA

**UN number:** UN3286

**UN proper shipping name:** Flammable liquid, toxic, corrosive, n.o.s. (Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)-)

**Transport hazard class(es):** 3

**Subsidiary class(es):** 6.1+8

**Packaging group:** II

**Environmental hazards:** No

**Labels required:** 3+6.1+8

**ERG Code:** 3CP

### IMDG

**UN number:** UN3286

**UN proper shipping name:** Flammable liquid, toxic, corrosive, n.o.s. (Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)-)

**Transport hazard class(es):** 3

**Subsidiary class(es):** 6.1+8

**Packaging group:** II

**Marine pollutant:** No

**Labels required:** 3+6.1+8

**EmS:** F-E, S-C

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## 15. Regulatory Information



**US federal regulations:** This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200 All components are on the U.S. EPA TSCA Inventory List.

**TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D):** Not regulated.

**US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050):** Not listed.

**CERCLA Hazardous Substance List (40 CFR 302.4):** Not listed.

**Superfund Amendments and Reauthorization Act of 1986 (SARA)**

**Hazard categories** Immediate Hazard - Yes

Delayed Hazard - Yes

Fire Hazard - Yes

Pressure Hazard - No

Reactivity Hazard - No

**SARA 302 Extremely hazardous substance:** No

**SARA 311/312 Hazardous chemical:** Yes

**SARA 313 (TRI reporting):** Not regulated.

**Other federal regulations**

**Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List:** Not regulated.

**Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):** Not regulated.

**Safe Drinking Water Act (SDWA):** Not regulated.

**Food and Drug Administration (FDA):** Not regulated.

**US state regulations:** This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

**US. Massachusetts RTK - Substance List:** Not regulated.

**US. New Jersey Worker and Community Right-to-Know Act:** Not regulated.

**US. Pennsylvania RTK - Hazardous Substances:** Not regulated.

**US. Rhode Island RTK:** Not regulated.

**US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance:** Not listed.

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## 16. Other Information

**NFPA Ratings:** Health: 2 Flammability: 4 Reactivity: 2 Special: W

**Revision date:** --

**Disclaimer:**

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