

## MATERIAL SAFETY DATA SHEET

Date Printed: 02/27/2007

Date Updated: 12/09/2005

Version 1.6

## Section 1 - Product and Company Information

Product Name	HEXAMETHYLDISILAZANE
Product Number	H4875
Brand	SIGMA
Company	Sigma-Aldrich
Address	3050 Spruce Street SAINT LOUIS MO 63103 US
Technical Phone:	800-325-5832
Fax:	800-325-5052
Emergency Phone:	314-776-6555

## Section 2 - Composition/Information on Ingredient

Substance Name	CAS #	SARA 313
1,1,1,3,3,3-HEXAMETHYLDISILAZANE	999-97-3	No
Formula	C6H19NSi2	
Synonyms	Bis(trimethylsilyl)amine * Hexamethyldisilazane * 1,1,1,3,3,3-Hexamethyldisilazane * HMDS * OAP * Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)- (9CI) * SZ 6079 * 1,1,1-Trimethyl-N-(trimethylsilyl)silanamine * Tri-Sil * TSL 8802 * HEXAMETHYLDISILAZANE	
RTECS Number:	JM9230000	

## Section 3 - Hazards Identification

## EMERGENCY OVERVIEW

Flammable (USA) Highly Flammable (EU). Toxic.  
Harmful by inhalation. Harmful if swallowed. Toxic in contact with skin. Causes burns.  
Readily absorbed through skin. Target organ(s): Nerves.

## HMIS RATING

HEALTH: 3\*  
FLAMMABILITY: 3  
REACTIVITY: 1

## NFPA RATING

HEALTH: 3  
FLAMMABILITY: 3  
REACTIVITY: 1

\*additional chronic hazards present.

For additional information on toxicity, please refer to Section 11.

## Section 4 - First Aid Measures

## ORAL EXPOSURE

If swallowed, wash out mouth with water provided person is

conscious. Call a physician immediately. Do not induce vomiting.

#### INHALATION EXPOSURE

If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

#### DERMAL EXPOSURE

In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician.

#### EYE EXPOSURE

In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

---

### Section 5 - Fire Fighting Measures

---

#### FLAMMABLE HAZARDS

Flammable Hazards: Yes

#### EXPLOSION HAZARDS

Vapor may travel considerable distance to source of ignition and flash back. Container explosion may occur under fire conditions.

#### FLASH POINT

57.2 °F 14 °C Method: closed cup

#### EXPLOSION LIMITS

Lower: 0.8 % Upper: 16.3 %

#### AUTOIGNITION TEMP

380 °C

#### FLAMMABILITY

N/A

#### EXTINGUISHING MEDIA

Suitable: For small (incipient) fires, use media such as "alcohol" foam, dry chemical, or carbon dioxide. For large fires, apply water from as far as possible. Use very large quantities (flooding) of water applied as a mist or spray; solid streams of water may be ineffective. Cool all affected containers with flooding quantities of water.

#### FIREFIGHTING

Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes. Specific Hazard(s): Flammable liquid. Emits toxic fumes under fire conditions.

---

### Section 6 - Accidental Release Measures

---

#### PROCEDURE TO BE FOLLOWED IN CASE OF LEAK OR SPILL

Evacuate area. Shut off all sources of ignition. Use nonsparking tools.

#### PROCEDURE(S) OF PERSONAL PRECAUTION(S)

Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves.

#### METHODS FOR CLEANING UP

Cover with dry-lime, sand, or soda ash. Place in covered containers using non-sparking tools and transport outdoors. Ventilate area and wash spill site after material pickup is complete.

---

## Section 7 - Handling and Storage

---

### HANDLING

User Exposure: Do not breathe vapor. Do not get in eyes, on skin, on clothing. Avoid prolonged or repeated exposure.

### STORAGE

Suitable: Keep tightly closed. Keep away from heat, sparks, and open flame. Handle and store under nitrogen.

Store at 2-8°C

### SPECIAL REQUIREMENTS

Readily hydrolyzed.

---

## Section 8 - Exposure Controls / PPE

---

### ENGINEERING CONTROLS

Safety shower and eye bath. Use nonsparking tools. Use only in a chemical fume hood.

### PERSONAL PROTECTIVE EQUIPMENT

Respiratory: Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator.

Hand: Compatible chemical-resistant gloves.

Eye: Chemical safety goggles.

Other: Faceshield (8-inch minimum).

### GENERAL HYGIENE MEASURES

Wash contaminated clothing before reuse. Discard contaminated shoes. Wash thoroughly after handling.

---

## Section 9 - Physical/Chemical Properties

---

Appearance	Physical State: Clear liquid Color: Colorless	
Property	Value	At Temperature or Pressure
Molecular Weight	161.4 AMU	
pH	> 7	
BP/BP Range	124.0 - 127.0 °C	
MP/MP Range	N/A	
Freezing Point	N/A	
Vapor Pressure	15 mmHg	20 °C
Vapor Density	4.6 g/l	
Saturated Vapor Conc.	N/A	
SG/Density	0.774 g/cm <sup>3</sup>	
Bulk Density	N/A	
Odor Threshold	N/A	
Volatile%	N/A	
VOC Content	N/A	
Water Content	N/A	

Solvent Content	N/A	
Evaporation Rate	N/A	
Viscosity	N/A	
Surface Tension	N/A	
Partition Coefficient	N/A	
Decomposition Temp.	N/A	
Flash Point	57.2 °F 14 °C	Method: closed cup
Explosion Limits	Lower: 0.8 % Upper: 16.3 %	
Flammability	N/A	
Autoignition Temp	380 °C	
Refractive Index	1.408	
Optical Rotation	N/A	
Miscellaneous Data	N/A	
Solubility	Solubility in Water: Insoluble. Other Solvents: MOSTCOMMON ORGANIC SOLVENTS	

N/A = not available

---

## Section 10 - Stability and Reactivity

---

### STABILITY

Stable: Stable.  
Conditions of Instability: Readily hydrolyzed.  
Conditions to Avoid: Ammonia is formed upon contact with water or humid air.  
Materials to Avoid: Strong oxidizing agents, Strong acids.

### HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide, Silicon oxide, Nitrogen oxides, Formaldehyde.  
Hazardous Decomposition Products Formed Upon Contact with Water: Ammonia

### HAZARDOUS POLYMERIZATION

Hazardous Polymerization: Will not occur

---

## Section 11 - Toxicological Information

---

### ROUTE OF EXPOSURE

Skin Contact: Causes burns.  
Skin Absorption: Harmful if absorbed through skin. Readily absorbed through skin.  
Eye Contact: Causes burns.  
Inhalation: Harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.  
Ingestion: Harmful if swallowed.

### TARGET ORGAN(S) OR SYSTEM(S)

Nerves.

### SIGNS AND SYMPTOMS OF EXPOSURE

Inhalation may result in spasm, inflammation and edema of the larynx and bronchi, chemical pneumonitis, and pulmonary edema. Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin. Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and vomiting.

### TOXICITY DATA

Oral  
Rat  
850 mg/kg  
LD50  
Remarks: Lungs, Thorax, or Respiration:Respiratory depression.  
Cardiac:Pulse rate. Behavioral:General anesthetic.

Inhalation  
Rat  
8,700 mg/m3  
LC50  
Remarks: Cardiac:Pulse rate. Behavioral:General anesthetic.  
Lungs, Thorax, or Respiration:Respiratory depression.

Intraperitoneal  
Rat  
800 MG/KG  
LD50  
Remarks: Behavioral:Muscle weakness. Behavioral:Tremor. Skin and  
Appendages: Other: Hair.

Oral  
Mouse  
850 mg/kg  
LD50  
Remarks: Behavioral:General anesthetic. Cardiac:Pulse rate.  
Lungs, Thorax, or Respiration:Respiratory depression.

Inhalation  
Mouse  
12,000 mg/m3  
LC50  
Remarks: Cardiac:Pulse rate. Behavioral:General anesthetic.  
Lungs, Thorax, or Respiration:Respiratory depression.

Intravenous  
Mouse  
>100 MG/KG  
LD50

Oral  
Rabbit  
1100 mg/kg  
LD50  
Remarks: Cardiac:Pulse rate. Behavioral:General anesthetic.  
Lungs, Thorax, or Respiration:Respiratory depression.

Skin  
Rabbit  
710 UL/KG  
LD50  
Remarks: Behavioral:Somnolence (general depressed activity).  
Lungs, Thorax, or Respiration:Other changes.  
Gastrointestinal:Other changes.

Skin  
Guinea pig  
1 ML/KG  
LD50  
Remarks: Behavioral:Tremor. Behavioral:Muscle weakness. Skin and  
Appendages: Other: Hair.

## IRRITATION DATA

Skin  
Rabbit  
0.5 ml  
Remarks: Severe irritation effect

## CHRONIC EXPOSURE - CARCINOGEN

Species: Mouse  
Route of Application: Intraperitoneal  
Dose: 1 GM/KG  
Exposure Time: I  
Result: Tumorigenic: Equivocal tumorigenic agent by RTECS  
criteria. Lungs, Thorax, or Respiration: Tumors.

---

## Section 12 - Ecological Information

---

### ACUTE ECOTOXICITY TESTS

Test Type: LC50 Fish  
Species: Brachydanio rerio  
Time: 96 h  
Value: 88 mg/l

Test Type: EC50 Daphnia  
Species: Daphnia magna  
Time: 48 h  
Value: 80 mg/l

Test Type: EC50 Algae  
Species: Scenedesmus subspicatus  
Time: 72 h  
Value: 19 mg/l

---

## Section 13 - Disposal Considerations

---

### APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION

Contact a licensed professional waste disposal service to dispose of this material. Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Observe all federal, state, and local environmental regulations.

---

## Section 14 - Transport Information

---

### DOT

Proper Shipping Name: Flammable liquid, toxic,  
corrosive, n.o.s.  
UN#: 3286  
Class: 3  
Packing Group: Packing Group II  
Hazard Label: Flammable liquid  
Hazard Label: Toxic substances.  
Hazard Label: Corrosive  
PIH: Not PIH

### IATA

Proper Shipping Name: Flammable liquid, toxic,  
corrosive, n.o.s.  
IATA UN Number: 3286  
Hazard Class: 3

---

Section 15 - Regulatory Information

---

EU ADDITIONAL CLASSIFICATION

Symbol of Danger: F-C

Indication of Danger: Highly Flammable. Corrosive.

R: 11-20/21/22-34

Risk Statements: Highly flammable. Harmful by inhalation, in contact with skin and if swallowed. Causes burns.

S: 16-26-36/37/39-45

Safety Statements: Keep away from sources of ignition - no smoking. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing, gloves, and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

US CLASSIFICATION AND LABEL TEXT

Indication of Danger: Flammable (USA) Highly Flammable (EU). Toxic.

Risk Statements: Harmful by inhalation. Harmful if swallowed. Toxic in contact with skin. Causes burns.

Safety Statements: Keep away from sources of ignition - no smoking. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing, gloves, and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

US Statements: Readily absorbed through skin. Target organ(s): Nerves.

UNITED STATES REGULATORY INFORMATION

SARA LISTED: No

TSCA INVENTORY ITEM: Yes

CANADA REGULATORY INFORMATION

WHMIS Classification: This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.

DSL: Yes

NDSL: No

---

Section 16 - Other Information

---

DISCLAIMER

For R&D use only. Not for drug, household or other uses.

WARRANTY

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2007 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.