1. Product and Company Identification
   Material name: HEXAMETHYLDISILAZANE
   Version #: 04
   Revision date: 04-01-2011
   CAS #: 999-97-3
   Product Codes: J.T.Baker: 5797, 9352, 9362, N152
   Macron: 2478
   Synonym(s): OAP * 1,1,1,3,3,3-Hexamethyldisilazane * Bis(trimethylsilyl)amine *
   1,1,1-trimethyl-N-(trimethylsilyl)silanamine * HMDS
   Manufacturer: Avantor Performance Materials, Inc.
   Address: 222 Red School Lane
            Phillipsburg, NJ  08865
            US
   Customer Service: 800-582-2537
   24 Hour Emergency: 908-859-2151
   Chemtrec: 800-424-9300

2. Hazards Identification
   Emergency overview: DANGER
   TOXIC. FLAMMABLE LIQUID AND VAPOR.
   Causes skin and eye burns. Harmful if inhaled or absorbed through skin. May be harmful if swallowed.
   OSHA regulatory status: This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication).
   Potential health effects:
   Routes of exposure:
   Inhalation: Harmful if inhaled. Inhalation of vapor or mist may cause lung edema. Do not breathe dust/fume/gas/mist/vapors/spray.
   Ingestion: May be harmful if swallowed. Irritating. May cause nausea, stomach pain and vomiting. Ingestion may result in vomiting; aspiration (breathing) of vomitus into lungs must be avoided as even small quantities may result in aspiration pneumonitis.
   Target organs: Skin. Eyes. RESPIRATORY SYSTEM.
   Chronic effects: Harmful if absorbed through skin. Inhalation of vapor or mist may cause lung edema.
   Signs and symptoms: Contact with this material will cause burns to the skin, eyes and mucous membranes.
   Potential environmental effects: Ecological injuries are not known or expected under normal use.

3. Composition / Information on Ingredients
   Components | CAS #  | Percent |
   HEXAMETHYLDISILAZANE | 999-97-3 | 99 - 100 |

4. First Aid Measures
   First aid procedures:
   Eye contact: Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.
### Personal Precautions

Ensure adequate ventilation. Keep unnecessary personnel away. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Fully encapsulating vapor protective clothing should be worn for spills and leaks with no fire. Ventilate closed spaces before entering them. Wear appropriate protective equipment and clothing during clean-up. Avoid skin contact and inhalation of vapors during disposal of spills.

### Ingestion

IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Do not induce vomiting without advice from poison control center. Never give anything by mouth to a victim who is unconscious or is having convulsions. Do not use mouth-to-mouth method if victim ingested the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.

### Notes to Physician

In case of shortness of breath, give oxygen. Keep victim warm. Keep victim under observation. Symptoms may be delayed.

### General Advice

In the case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

### 5. Fire Fighting Measures

#### Flammable Properties

Flammable by OSHA criteria. Can release vapors that form explosive mixtures at temperatures at or above the flash point. Vapors may travel considerable distance to a source of ignition and flash back. Runoff to sewer may cause fire or explosion hazard. Heat may cause the containers to explode. Contact with strong oxidizers may cause fire. Static discharge: material can accumulate static charges which may cause an incendiary electrical discharge.

#### Extinguishing Media

- **Suitable Extinguishing Media**: Carbon dioxide (CO2). Foam. Dry chemical powder. Do not use water as an extinguisher.
- **Unsuitable Extinguishing Media**: Do not use water jet as an extinguisher, as this will spread the fire.

#### Protection of Firefighters

- **Specific Hazards Arising from the Chemical**: By heating and fire, harmful vapors/gases may be formed.
- **Protection Equipment and Precautions for Firefighters**: Move containers from fire area if you can do so without risk. Cool containers exposed to flames with water until well after the fire is out. Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. For massive fire in cargo area, use unmanned hose holder or monitor nozzles, if possible. If not, withdraw and let fire burn out. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tanks due to fire. 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. Some of these materials, if spilled, may evaporate leaving a flammable residue.

#### Special Protective Equipment for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

### 6. Accidental Release Measures

#### Personal Precautions

Ensure adequate ventilation. Keep unnecessary personnel away. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Fully encapsulating vapor protective clothing should be worn for spills and leaks with no fire. Ventilate closed spaces before entering them. Wear appropriate protective equipment and clothing during clean-up. Avoid skin contact and inhalation of vapors during disposal of spills.

#### Environmental Precautions

Prevent further leakage or spillage if safe to do so. Do not contaminate water.

#### Methods for Containment

ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Prevent entry into waterways, sewer, basements or confined areas.
Methods for cleaning up

Use only non-sparking tools. Should not be released into the environment. Do not flush to sewer.

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: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills in original containers for re-use. Following product recovery, flush area with water. Clean up in accordance with all applicable regulations. For waste disposal, see section 13 of the MSDS.

J. T. Baker SOLUSORB® solvent adsorbent is recommended for spills of this product.

7. Handling and Storage

Handling

DO NOT handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. 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. Do not breathe mist or vapor. Do not get this material in contact with eyes. Do not get this material in contact with skin. When using, do not eat, drink or smoke. Do not use in areas without adequate ventilation. Avoid release to the environment. Wear personal protective equipment. Wash thoroughly after handling.

Storage

Store in a cool, dry place. Store in a well-ventilated place. Keep container tightly closed. Do not handle or store near an open flame, heat or other sources of ignition. Protect from sunlight. 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. Do not breathe mist or vapor. Do not get this material in contact with eyes. Do not get this material in contact with skin. When using, do not eat, drink or smoke. Do not use in areas without adequate ventilation. Avoid release to the environment. Wear personal protective equipment. Wash thoroughly after handling.

8. Exposure Controls / Personal Protection

Exposure guidelines

No exposure standards allocated.

Engineering controls

Explosion-proof general and local exhaust ventilation. Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Ensure adequate ventilation, especially in confined areas.

Personal protective equipment

Eye / face protection

Chemical goggles are recommended. Face-shield. Provide eyewash station and safety shower.

Skin protection

Wear appropriate chemical resistant clothing. Chemical resistant gloves. Do not get this material in contact with skin.

Respiratory protection

Use a positive-pressure air-supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air-purifying respirators may not provide adequate protection.

General hygiene considerations

Do not get in eyes. Do not get this material in contact with skin. When using, do not eat, drink or smoke. Wash hands after handling and before eating. Contaminated work clothing should not be allowed out of the workplace. Handle in accordance with good industrial hygiene and safety practice.

9. Physical & Chemical Properties

Appearance

Clear.

Color

Colorless.

Odor

Ammoniacal.

Odor threshold

Not available.

Physical state

Liquid.
Form: Liquid.
pH: 8.5

Melting point: -94 °F (-70 °C)
Freezing point: -94 °F (-70 °C)
Boiling point: 257 °F (125 °C)
Flash point: 57.2 °F (14 °C) Closed Cup
Evaporation rate: <= 1 BuAc
Flammability limits in air, upper, % by volume: 16.3
Flammability limits in air, lower, % by volume: 0.8

Vapor pressure: 1.84 kPa
Vapor density: 4.6
Specific gravity: 0.7742
Relative density: Not available.
Solubility (water): Not available.
Partition coefficient (n-octanol/water): 2.62
Auto-ignition temperature: 617 °F (325 °C)
Decomposition temperature: Not available.
VOC: 100 % v/v
Molecular weight: 161.4 g/mol
Molecular formula: C6-H19-N-Si2

10. Chemical Stability & Reactivity Information

Chemical stability: Material is stable under normal conditions.
Possibility of hazardous reactions: Will not occur.

11. Toxicological Information

<table>
<thead>
<tr>
<th>Toxicological data</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product</td>
<td></td>
</tr>
<tr>
<td>HEXAMETHYLDISILAZANE (999-97-3)</td>
<td>Acute Dermal LD50 Rabbit: 0.71 ml/kg</td>
</tr>
<tr>
<td></td>
<td>Acute Inhalation LC50 Rat: 8.7 mg/l 4.00 Hours</td>
</tr>
<tr>
<td></td>
<td>Acute Oral LD50 Rat: 847 mg/kg</td>
</tr>
</tbody>
</table>

* Estimates for product may be based on additional component data not shown.

Sensitization: Not classified.
Acute effects: Toxic by inhalation. Toxic in contact with skin. Harmful if swallowed.
Local effects: Causes burns.
Chronic effects: Harmful if absorbed through skin. Inhalation of vapor or mist may cause lung edema. Prolonged exposure may cause chronic effects.
Carcinogenicity: This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.
Skin corrosion/irritation: Causes skin burns.
### Epidemiology
Not available.

### Neurological effects
Not available.

### Symptoms and target organs
Contact with this material will cause burns to the skin, eyes and mucous membranes.

### 12. Ecological Information

<table>
<thead>
<tr>
<th>Ecotoxicity</th>
<th>This product has no known eco-toxicological effects.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental effects</td>
<td>An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.</td>
</tr>
<tr>
<td>Aquatic toxicity</td>
<td>May cause long-term adverse effects in the aquatic environment.</td>
</tr>
<tr>
<td>Persistence and degradability</td>
<td>No data is available on the degradability of this product.</td>
</tr>
<tr>
<td>Partition coefficient</td>
<td>2.62</td>
</tr>
<tr>
<td>(n-octanol/water)</td>
<td></td>
</tr>
</tbody>
</table>

### 13. Disposal Considerations

<table>
<thead>
<tr>
<th>Waste codes</th>
<th>D001: Waste Flammable material with a flash point &lt;140 F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disposal instructions</td>
<td>If discarded, this product is considered a RCRA ignitable waste, D001. Do not incinerate sealed containers. Dispose of contents/container in accordance with local/regional/national/international regulations.</td>
</tr>
<tr>
<td>Contaminated packaging</td>
<td>Since emptied containers retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.</td>
</tr>
</tbody>
</table>

### 14. Transport Information

**DOT**

| Basic shipping requirements:    |                                                      |
| UN number                       | UN3286                                                |
| Proper shipping name            | Flammable liquid, toxic, corrosive, n.o.s. (HEXAMETHYLDISILAZANE) |
| Hazard class                    | 3                                                    |
| Subsidiary hazard class         | 6.1, 8                                               |
| Packing group                   | II                                                   |
| Special provisions              | IB2, T11, TP2, TP13, TP27                             |
| Labels required                 | 3, 6.1, 8                                            |
| Packaging exceptions            | 150                                                  |
| Packaging non bulk              | 202                                                  |
| Packaging bulk                  | 243                                                  |
| ERG number                      | 131                                                  |

**IATA**

| Basic shipping requirements:    |                                                      |
| UN number                       | 3286                                                 |
| Proper shipping name            | Flammable liquid, toxic, corrosive, n.o.s. (HEXAMETHYLDISILAZANE) |
| Hazard class                    | 3                                                    |
| Subsidiary hazard class         | 6.1, 8                                               |
| Packing group                   | II                                                   |
| ERG code                        | 3CP                                                  |

**IMDG**

| Basic shipping requirements:    |                                                      |
| UN number                       | 3286                                                 |
| Proper shipping name            | FLAMMABLE LIQUID, TOXIC, CORROSIVE, N.O.S. (HEXAMETHYLDISILAZANE) |
### 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.

CERCLA/SARA Hazardous Substances - Not applicable.

**CERCLA (Superfund) reportable quantity**

None

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

- **Immediate Hazard** - Yes
- **Delayed Hazard** - Yes
- **Fire Hazard** - Yes
- **Pressure Hazard** - No
- **Reactivity Hazard** - No

**Section 311 hazardous chemical**

Yes

**Inventory status**

<table>
<thead>
<tr>
<th>Country(s) or region</th>
<th>Inventory name</th>
<th>On inventory (yes/no)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>Australian Inventory of Chemical Substances (AICS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada</td>
<td>Domestic Substances List (DSL)</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada</td>
<td>Non-Domestic Substances List (NDSL)</td>
<td>No</td>
</tr>
<tr>
<td>China</td>
<td>Inventory of Existing Chemical Substances in China (IECSC)</td>
<td>Yes</td>
</tr>
<tr>
<td>Europe</td>
<td>European Inventory of Existing Commercial Chemical Substances (EINECS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Europe</td>
<td>European List of Notified Chemical Substances (ELINCS)</td>
<td>No</td>
</tr>
<tr>
<td>Japan</td>
<td>Inventory of Existing and New Chemical Substances (ENCS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Korea</td>
<td>Existing Chemicals List (ECL)</td>
<td>Yes</td>
</tr>
<tr>
<td>New Zealand</td>
<td>New Zealand Inventory</td>
<td>Yes</td>
</tr>
<tr>
<td>Philippines</td>
<td>Philippine Inventory of Chemicals and Chemical Substances (PICCS)</td>
<td>Yes</td>
</tr>
<tr>
<td>United States &amp; Puerto Rico</td>
<td>Toxic Substances Control Act (TSCA) Inventory</td>
<td>Yes</td>
</tr>
</tbody>
</table>

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

**State regulations**

This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.
**Saf-T-Data**

Health: 2 - Moderate (Poison)
Flammability: 3 - Severe (Flammable)
Reactivity: 2 - Moderate
Contact: 4 - Extreme (Corrosive)
Lab Protective Equip: DB - GOGGLES & SHIELD; LAB COAT & APRON; VENT HOOD; PROPER GLOVES; CLASS B EXTINGUISHER
Storage Color Code: RS - Red Stripe (Store Separately)

16. Labeling Info

**Label Hazard Warning**

DANGER

TOXIC. FLAMMABLE LIQUID AND VAPOR. Causes skin and eye burns. Harmful if inhaled or absorbed through skin. May be harmful if swallowed.

**Label Precautions**

Do not get in eyes, on skin, or on clothing. Do not breathe mist or vapor. Keep container closed. Use only with adequate ventilation. Wash thoroughly after handling.

**Label First Aid**

Immediately flush eyes with plenty of water for at least 15 minutes. Immediately flush skin with plenty of water. If gas/fume/vapor/dust/mist from the material is inhaled, remove the affected person immediately to fresh air. If the affected person is not breathing, apply artificial respiration. Get medical attention immediately. IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Do not induce vomiting without advice from poison control center. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.

17. Other Information

**NFPA ratings**

Health: 2
Flammability: 3
Instability: 1

**Disclaimer**

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**Issue date**

04-01-2011

**This data sheet contains changes from the previous version in section(s):**

Exposure Controls / Personal Protection: Engineering controls
Chemical Stability & Reactivity Information: Hazardous decomposition products
Other Information: Disclaimer