## MATERIAL SAFETY DATA SHEET
OSHA HAZARD COMMUNICATION RULE

**DATE OF LAST REVISION:** 3-10-04

### CHEMICAL IDENTIFICATION

<table>
<thead>
<tr>
<th>LABEL IDENTITY</th>
<th>CHEMICAL NAME/SYNONYMS</th>
<th>FORMULA</th>
<th>CHEMICAL FAMILY</th>
<th>CAS REGISTRY NUMBER</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>GERMANIUM NITRIDE</td>
<td>Ge$_3$N$_4$</td>
<td>METAL</td>
<td>12065-36-0, LISTED IN THE TSCA INVENTORY</td>
</tr>
</tbody>
</table>

### PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>COLOR, FORM ODOR</th>
<th>MOLECULAR WEIGHT</th>
<th>PH</th>
<th>BOILING POINT</th>
<th>DENSITY (gm/cc)</th>
<th>VAPOR PRESSURE @ 20°</th>
<th>% VOLATILE BY VOLUME (%)</th>
<th>REACTION WITH WATER</th>
<th>EVAPORATION RATE (H$_2$O=1)</th>
<th>SOLUBILITY IN WATER</th>
<th>MP/MP RANGE</th>
<th>FREEZING POINT</th>
</tr>
</thead>
<tbody>
<tr>
<td>NA</td>
<td>273.8 AMU</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>850°C</td>
<td>NA</td>
</tr>
</tbody>
</table>

### FIRE AND EXPLOSION HAZARD DATA

<table>
<thead>
<tr>
<th>FLASH POINT</th>
<th>AUTOIGNITION TEMPERATURE (°C)</th>
<th>FLAMMABILITY</th>
<th>EXTINGUISHING MEDIA</th>
<th>SPECIAL FIRE FIGHTING PROCEDURES</th>
<th>UNUSUAL FIRE &amp; EXPLOSION HAZARDS</th>
</tr>
</thead>
<tbody>
<tr>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>Suitable: Water spray. Carbon dioxide, dry chemical powder, or appropriate foam</td>
<td>Protective equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes. Specific Hazard (s): Emits toxic fumes under fire conditions.</td>
<td>Material: Irritant</td>
</tr>
</tbody>
</table>
GERMANIUM NITRIDE
MATERIAL SAFETY DATA SHEET

HEALTH HAZARD INFORMATION

ROUTES OF EXPOSURE
INHALATION: Material is irritating to mucous membranes and upper respiratory tract.
MULTIPLE ROUTES: May be harmful by inhalation, ingestion, or skin absorption. Causes eye and skin irritation.

EFFECTS OF OVEREXPOSURE:
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

EMERGENCY FIRST AID PROCEDURES:
ORAL EXPOSURE: If swallowed, wash out mouth with water provided person is conscious. Call a physician.
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 contact, immediately wash skin with soap and copious amounts of water.
EYE EXPOSURE: In case of contact, immediately flush eyes with copious amounts of water for at least 15 minutes.

REACTIVITY DATA

STABILITY

CONDITIONS OF INSTABILITY
Protect from moisture.

CONDITIONS TO AVOID
Protect from moisture.

MATERIALS TO AVOID
Strong oxidizing agents.

HAZARDOUS DECOMPOSITION PRODUCTS

Germanium oxides, Nitrogen oxides.
SAFE HANDLING AND USE

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:
Wear respirator, chemical safety goggles, rubber boots, and heavy rubber gloves.
Sweep up, place in a bag and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

WASTE DISPOSAL METHOD:
Consult federal, state and local regulations for proper disposal.

SPECIAL PROTECTIVE INFORMATION

RESPIRATORY PROTECTION
Government approved respirator

LOCAL EXHAUST
Required

MECHANICAL (general)
Recommended

PROTECTIVE GLOVES
Compatible chemical-resistant gloves

EYE PROTECTION
Chemical safety glasses

SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING/STORAGE:
Store in tightly closed containers in a cool, dry place. Do not breathe dust. Avoid contact with eyes, skin, and clothing. Wash thoroughly after handling. Wash contaminated clothing before reuse.

TRANSPORTATION REQUIREMENTS
DOT CLASS: Not Classified
UN NUMBER: NC
IMCO CLASS: NC
OTHER:

PRECAUTIONARY LABELING
Non-hazardous for air transport

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NA= NOT APPLICABLE
ND= NO DATA FOUND