MATERIAL SAFETY DATA SHEET
OSHA HAZARD COMMUNICATION RULE

DATE OF LAST REVISION: 05-2-03

<table>
<thead>
<tr>
<th>CHEMICAL IDENTITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>LABEL IDENTITY</td>
</tr>
<tr>
<td>CHEMICAL NAME/SYNONYMS</td>
</tr>
<tr>
<td>FORMULA</td>
</tr>
<tr>
<td>CHEMICAL FAMILY</td>
</tr>
<tr>
<td>HAZARDOUS INGREDIENTS</td>
</tr>
<tr>
<td>%: 100</td>
</tr>
<tr>
<td>TLV: 10 mg/m3</td>
</tr>
</tbody>
</table>

PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>COLOR, FORM AND ODOR</th>
<th>Steel grey crystalline powder, or pieces; no odor</th>
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</thead>
<tbody>
<tr>
<td>BOILING POINT</td>
<td>2355-2600° C</td>
</tr>
<tr>
<td>DENSITY (gm/cc)</td>
<td>2.32 - 2.34</td>
</tr>
<tr>
<td>VAPOUR PRESSURE @ 20°</td>
<td>1 mm at 1724° C</td>
</tr>
<tr>
<td>REACTION WITH WATER</td>
<td>None</td>
</tr>
<tr>
<td>EVAPORATION RATE (H2O=1)</td>
<td>NA</td>
</tr>
<tr>
<td>SOLUBILITY IN WATER</td>
<td>Insoluble</td>
</tr>
<tr>
<td>MELTING POINT</td>
<td>1410 - 1420° C</td>
</tr>
</tbody>
</table>

FIRE AND EXPLOSION HAZARD DATA

| FLASH POINT | NA |
| AUTOIGNITION TEMPERATURE (°C) | NA |
| FLAMMABILITY | May be flammable (in fine powder form) |
| EXTINGUISHING MEDIA | Agents for metal fires (graphite, sand, MET-L-X, TEC) - DO NOT USE WATER !!! |
| SPECIAL FIRE FIGHTING PROCEDURES | Wear a self-contained breathing apparatus and full protective clothing to prevent contact with skin and eyes. |
| UNUSUAL FIRE & EXPLOSION HAZARDS | A potentially flammable metal in the fine powder form. May generate toxic fumes if involved in a fire. |

HEALTH HAZARD INFORMATION

- No data on this compound *

HMIS RATING:
- HEALTH: 1*
- FLAMMABILITY: 1
- REACTIVITY: 0
- PERSONAL PROTECTION: D
SILICON METAL
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ROUTES OF ENTRY:
INHALATION: Yes  SKIN: Yes  INGESTION: No

MEDICAL CONDITIONS AGGRAVATED BY OVEREXPOSURE: Previous respiratory or dermal disorders.

EFFECTS OF OVEREXPOSURE (acute and chronic):
DERMAL/EYE: Mild irritation to the eye. No reports of injury or illness from ingestion or skin contact.
INGESTION: Silicon is toxicologically inert. No reports of injury or illness from ingestion.

Carcinogenicity: No  NTP: No  IARC Monographs: No  OSHA Regulate: No

EMERGENCY FIRST AID PROCEDURES:
INGESTION: Administer water and induce vomiting, seek medical attention.
INHALATION: Remove to fresh air, seek medical attention.
SKIN CONTACT: Wash affected area with soap and water, seek medical attention.
EYE CONTACT: Flush eyes for at least 15 minutes with lukewarm water, seek medical.

REACTIVITY DATA

STABILITY
Stable
CONDITIONS CONTRIBUTING TO UNSTABILITY
ND
INCOMPATIBILITY (MATERIALS TO AVOID)
Ca, C12, CoF2, F2, MnF3, Rb2C2, AgF, Na, K, interhalogens, acids, bases, Strong oxidizers: Metal acetylides, alkali metal carbonates, metal hexafluorides.

HAZARDOUS DECOMPOSITION PRODUCTS
None
HAZARDOUS POLYMERIZATION
Will Not Occur
CONDITIONS TO AVOID
None

SAFE HANDLING AND USE

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:
Wear self-contained breathing apparatus and full protective clothing, vacuum spill and place in container for proper disposal. Take care not to raise dust.

WASTE DISPOSAL METHOD:
Dispose of in accordance with applicable federal, state and local regulations.

RESPIRATORY CAUTIONS (TYPES) USE ONLY NIOSH APPROVED: NIOSH-approved respirator for dusts, mists, and fumes.
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SPECIAL PROTECTIVE INFORMATION

LOCAL EXHAUST: Use with adequate ventilation to keep exposure below TLV.
MECHANICAL (general): Recommended
SPECIAL: NA
OTHER: NA
PROTECTIVE GLOVES: Neoprene
EYE PROTECTION: Safety glasses
OTHER PROTECTIVE EQUIPMENT: Wear protective clothing to prevent contamination of skin and clothes

SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING/STORAGE:
Flammable metal as a fine powder. Store in dry, tightly closed containers, away from incompatible materials. Wash hands and face thoroughly after handling and before eating.

TRANSPORTATION REQUIREMENTS: (for powder <325 mesh; not classified for coarser powders/pieces)
DOT CLASS: Flammable solid
UN NUMBER: 1346
IMCO CLASS: 4.1
OTHER: SPC

PRECAUTIONARY LABELING: NONE

THE ABOVE INFORMATION IS ACCURATE TO THE BEST OF OUR KNOWLEDGE. HOWEVER, SINCE DATA, SAFETY STANDARDS AND GOVERNMENT REGULATIONS ARE SUBJECT TO CHANGE THE CONDITIONS OF HANDLING AND USE, OR MISUSE ARE BEYOND OUR CONTROL, ANGSTROM SCIENCES MAKE NO WARRANTY, EITHER EXPRESSED OR IMPLIED, WITH RESPECT TO THE COMPLETENESS OR CONTINUING ACCURACY OF THE INFORMATION CONTAINED HEREIN AND DISCLAIMS ALL LIABILITY FOR THE RELIANCE THEREON. USER SHOULD SATISFY HIMSELF THAT HE HAS ALL CURRENT DATA RELEVANT TO HIS PARTICULAR USE.

NA= NOT APPLICABLE    ND= NO DATA FOUND