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## MATERIAL SAFETY DATA SHEET

### Section 1- PRODUCT IDENTIFICATION

COMPOSITION <b>Si3N4</b>	PRODUCT NAME <b>Silicon Nitride</b>
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### Section 2- HAZARDOUS INGREDIENTS

Note: Products under normal conditions do not represent an inhalation, ingestion or contact health hazard.

MATERIAL OR COMPONENT	CAS NUMBER	WT%	EXPOSURE LIMITS	
			OSHA PEL (Mg/M3)	ACGIH TLV(MG/M3)
<b>Silicon Nitride</b>	<b>12033-89-5</b>	<b>0.0 – 100.0</b> <b>0.0 – 100.0</b>	<b>10MG/M3</b>	<b>10 MG/M3</b>

### Section 3- PHYSICAL DATA

MATERIAL IS (AT NORMAL CONDITIONS) <input type="checkbox"/> Liquid <input type="checkbox"/> Solid <input type="checkbox"/> Gas <input type="checkbox"/> Other	APPEARANCE AND ODOR <b>Grayish White Powder, No Odor.</b>
MELTING POINT (BASE METAL)  <b>1900.0 degrees C</b>	SPECIFIC GRAVITY  <b>3.44</b>

### Section 4- FIRE AND EXPLOSION

Flash Point (Method Used)	Flammable Limits	LEL	UEL
<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>

#### EXTINGUISHING MEDIA

**N/A. Use suitable extinguishing media for surrounding material and type of fire.**

#### SPECIAL FIRE FIGHTING PROCEDURES

**Requires full face self contained breathing apparatus with full protective clothing to prevent contact. Isolate run-off to prevent environmental pollution.**

#### UNUSUAL FIRE AND EXPLOSION HAZARDS

**When heated to decomposition, silicon nitride may emit toxic fumes of ammonia and ozone. May react with moist air to liberate ammonia gas.**

Section 5- REACTIVITY DATA	
STABILITY <b>Stable</b>	INCOMPATIBILITY (MATERIALS TO AVOID) <b>Water, steam, moisture and strong acids.</b>
CONDITIONS TO AVOID <b>None Reported</b>	
HAZARDOUS DECOMPOSITION PRODUCTS <b>Ammonia gas, ozone, hydrogen gas and oxides of nitrogen.</b>	

Section 6- HEALTH HAZARD GUIDE
MAJOR EXPOSURE HAZARD  <input type="checkbox"/> <b>Inhalation</b> <input type="checkbox"/> <b>Skin</b> <input type="checkbox"/> <b>Skin Absorption</b> <input type="checkbox"/> <b>Eye Contact</b> <input type="checkbox"/> <b>Ingestion</b>
EFFECTS OF OVEREXPOSURE  <p><b>INHALATION:</b> Acute; May cause irritation to the nose, throat and mucus membrane, chemical pneumonia, chemical bronchitis and pulmonary edema. Ammonia gas may cause irritation to the nose and throat, dyspnea, bronchial spasms, chest pain, pulmonary edema and pink frothy sputnum.</p> <p>Chronic; May cause pulmonary fibrosis and pneumosilicosis. Repeated or prolonged exposure to ammonia may cause swelling of mouth and throat to the point of asphyxiation, permanent injury or death.</p> <p><b>SKIN CONTACT:</b> Acute; May cause irritation. Ammonia gas may cause irritation and chemical burns. Chronic; Repeated or prolonged exposure can cause permanent tissue damage.</p> <p><b>EYE CONTACT:</b> Acute; May cause irritation. Ammonia gas may cause severe irritation and chemical burns. Chronic; Repeated or prolonged exposure may cause irreversible damage to the eye.</p> <p><b>INGESTION:</b> Acute; Ammonia gas may cause nausea, vomiting and burns. Chronic; No chronic health effects recorded.</p> <p><b>TARGET ORGANS:</b> May affect the respiratory system, lungs, skin and eyes.</p>
EMERGENCY & FIRST AID PROCEDURES  <p><b>INHALATION:</b> Remove victim from exposed area to fresh air. Keep warm and quiet. Give oxygen if breathing is difficult and seek medical attention.</p> <p><b>SKIN CONTACT:</b> Remove contaminated clothing and shoes immediately. Brush material off skin and wash affected area with mild soap and water. Seek medical attention.</p> <p><b>EYE CONTACT:</b> Flush eyes with lukewarm water, lifting upper and lower eyelids for at least 15 minutes. Seek medical attention.</p> <p><b>INGESTION:</b> Give 1-2 glasses of milk or water and induce vomiting; seek medical attention. Never induce vomiting or give anything by mouth to an unconscious person.</p>

Section 7- SPILL OR LEAK PROCEDURES
SPILL OR LEAK PROCEDURES <b>Wear appropriate respiratory and protective equipment specified in Section 8-Special Protection. Isolate spill area and provide ventilation and extinguish. Vacuum up spill using a high efficiency particulate absolute (HEPA) air filter and place in a closed container for proper disposal. Take care not to raise dust.</b>
WASTE DISPOSAL METHODS <b>Observe all federal, state and local regulations when storing or disposing of this substance.</b>

## Section 8- SPECIAL PROTECTION

RESPIRATORY

**NIOSH approved dust and vapor cartridge respirator.**

VENTILATION

**Local Exhaust: To maintain concentration at or below the PEL.**

**Special: None**

**Mechanical: Not Recommended**

**Other: None**

EYE PROTECTION & PROTECTIVE CLOTHING

**Use safety glasses. Wear rubber gloves. Use protective gear suitable to prevent contamination.**

## Section 9- SPECIAL PRECAUTIONS

Work/Hygienic/Maintenance Practices:

**Implement engineering and work practice controls to reduce and maintain concentration of exposure at low levels. Use good housekeeping and sanitation practices. Do not use tobacco or food in work area. Wash thoroughly before eating and smoking. Do not blow dust off clothing or skin with compressed air.**

**Some of the chemicals listed herein are research or experimental substances which may be toxic, as defined by various governmental regulations. In accordance with Environmental Protection Agency regulations and the Toxic Substance Control Act (TSCA), these materials should only be handled by, or under the supervision of, a "technically qualified individual", as defined in 40 CFR 710.2(aa).**

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