

Material Safety Data Sheet

Identity: Silicon Nitride

Formula: Si₃N₄

SECTION I - GENERAL INFORMATION

Manufacturer: [Stanford Advanced Materials](#) (SAM)

The information below is believed to be accurate and represents the best information available to SAM. However, SAM makes no warranty, expressed or implied with respect to such information and assumes no liability resulting from its use.

SECTION II - PRODUCT INFORMATION/HAZARDOUS INGREDIENTS

Molecular weight: 140.28

CAS #	OSHA PEL	ACGIH TLV	%
12033-89-5	15mg/m ³	10mg/m ³	0.0-100.0%

SECTION III - PHYSICAL/ CHEMICAL CHARACTERISTICS

Physical States: Solid

Boiling Point: N/A	Specific Gravity (H ₂ O=1): 3.44
Melting Point: 1900.00 °C	Vapor Pressure (vs. air or mmHg): N/A
Evaporation Rate: N/A	Vapor Density (vs. air=1): N/A
Solubility in water: Insoluble	Percent Volatile: N/A

Appearance and odor: Gray-white powder and pieces, odorless

SECTION IV - FIRE AND EXPLOSION DATA

Flash Point: N/A *Method Used:* N/A *Explosive Limits:* LEL: N/A UEL: N/A
Extinguishing Media: Use suitable extinguishing agent for surrounding material and type of fire

Special Fire Fighting Procedures:

Firefighters must wear full face, self-contained breathing apparatus with full protective clothing to prevent contact with skin and eyes. Fumes from fire are hazardous. Isolate runoff to prevent environmental pollution.

Unusual Fire and Explosion Hazards:

When heated to decomposition, silicon nitride may emit toxic fumes of ammonia and ozone. Contact with acids may generate flammable hydrogen gas.

SECTION V - REACTIVITY DATA

Stability: Stable

Conditions to Avoid (stability):

Incompatibility: Strong acids and KOH

Hazardous Decomposition or Byproducts: Ammonia gas, ozone, hydrogen gas, and oxides of nitrogen

Hazardous Polymerization: Will not occur

Conditions to avoid (hazardous polymerization): None

SECTION VI - HEALTH HAZARD DATA

Routes of entry: Inhalation? Yes Skin? Yes Eyes? Yes Ingestion? Yes Other? No

Signs and Symptoms of Exposure:

Inhalation: May cause a red, dry throat, sneezing coughing and shortness of breath

Ingestion: N/A

Skin: May cause redness, burning, itching and inflammation

Eye: May cause redness, burning, itching, and watering

Health Hazards (Acute and Chronic):

Inhalation:

Acute: May cause irritation to the nose, throat, and mucous membranes, chemical pneumonia, chemical bronchitis and pulmonary edema

Chronic: May cause pulmonary fibrosis and pneumosilicosis

Ingestion: No chronic health effects have been recorded

Skin:

Acute: May cause irritation

Chronic: No chronic health effects have been recorded

Eye:

Acute: May cause irritation

Chronic: No chronic health effects have been recorded

Target Organs: May affect respiratory system, lungs, skin, and eyes

Carcinogenicity: NTP? No IARC Monographs? No OSHA? No

Medical Conditions Aggravated by Exposure: Pre-existing respiratory and skin disorders

Emergency and First Aid Procedures:

Inhalation: Remove victim to fresh air, keep warm and quiet, and give oxygen if breathing is difficult; seek medical attention

Ingestion: Do not induce vomiting; Seek medical attention

Skin: Remove contaminated clothing, brush material off skin, wash affected area with mild soap and water, and seek medical attention if symptoms persist

Eye: Flush eyes with lukewarm water, lifting upper and lower eyelids for at least 15 minutes and seek medical attention

SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE

Steps to be taken in case material is released or spilled:

Wear appropriate respiratory and protective equipment specified in section VIII. Isolate spill area, provide ventilation and extinguish sources of ignition. 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.

Waste disposal method:

Dispose of in accordance with state, local, and federal regulations.

Hazard Label Information:

Store in cool, dry area and in tightly sealed container. Wash thoroughly after handling.

SECTION VIII - CONTROL MEASURES

Protective Equipment Summary (Hazard Label Information):

NIOSH approved respirator, impervious rubber gloves, safety glasses, clothes to prevent skin contact

Respiratory Protection (Specify Type): NIOSH approved dust respirator.

Ventilation:

Local Exhaust: To maintain concentration at low exposure levels. Mechanical (General): Recommended.

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.

Please be advised that N/A can either mean Not Applicable or No Data Has Been Established
