

MATERIAL SAFETY DATA SHEET**I PRODUCT IDENTIFICATION**

Trade Name: Gallium Nitride	Chemical Family: Metal Nitride
Formula: GaN	CAS #: 25617-97-4

II HAZARDOUS INGREDIENTS

Hazardous Component	%	OSHA PEL	ACGIH TLV
Gallium Nitride	0-100	N/E	N/E

III PHYSICAL DATA

Boiling Point: N/E	Melting Point: 800.0 °C
Physical States: Solid	Vapor Density (Air=1): N/A
Specific Gravity: 6.1 gm/cc	Vapor Pressure (mm Hg): N/A
Appearance and Odor: Dark grey powder, slight ammonia odor in moist air.	Solubility in Water: Insoluble

IV FIRE AND EXPLOSION HAZARDS DATA

Flash Point (Method Used): N/A (Non-flammable) **Explosive Limits: LEL:** NA **UEL:** NA

Extinguishing Media: DO NOT USE WATER. Use suitable extinguishing media for surrounding materials 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 & Explosion Hazards: When heated to decomposition, gallium nitride may emit toxic fumes of ammonia. Contact with water releases flammable gases.

V HEALTH HAZARD INFORMATION**Effects of Exposure:**

To the best of our knowledge the chemical, physical and toxicological properties of gallium nitride have not been thoroughly investigated and recorded.

Gallium and gallium compounds may cause metallic taste, dermatitis and depression of the bone marrow function. Large doses may cause hemorrhagic nephritis.

The details of the toxicity of nitrides as a group are unknown. (Sax, Dangerous Properties of Industrial Materials, eighth edition)

Acute Effects:

Inhalation: May cause irritation to the nose, throat & mucous membranes.

Ingestion: May cause nausea, vomiting and anorexia.

Skin: May cause irritation.

Eye: May cause irritation.

Chronic Effects:

Inhalation: May cause depression of bone marrow function.

Ingestion: No chronic health effects recorded.

Skin: May cause dermatitis & depression of bone marrow function.

Eye: No chronic health effects recorded.

Routes of Entry: Inhalation, Skin, Eyes, Ingestion,

Target Organs: No target organs recorded.

Carcinogenicity: None

Medical Conditions Generally Aggravated by Exposure: Pre-existing respiratory disorders.

Signs and Symptoms of Exposure:

Inhalation: May cause a red, dry throat, sneezing, coughing and difficulty breathing.

Ingestion: May cause behavioral changes such as sleepiness and loss of appetite may be noted. Other symptoms may include nausea, vomiting, metallic taste in mouth general itching and sweating.

Skin: May cause redness and itching.

Eye: May cause redness, itching and watering.

EMERGENCY AND FIRST AID PROCEDURES:

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

INGESTION: Give 1-2 glasses of mild or water, induce vomiting. Keep warm and quite. Seek medical attention. Never give anything by mouth or induce vomiting to an unconscious person.

SKIN: Remove contaminated clothing; brush material off skin. Wash affected area with mild soap and water; seek medical attention if symptoms persist.

EYE: Flush eyes with lukewarm water, lifting upper and lower eyelids, for at least 15 minutes. Seek medical attention if symptoms persist.

VI REACTIVITY DATA

Stability: Stable

Conditions to Avoid: Water/moisture, heat

Incompatibility (Materials to Avoid): Water/moisture, oxidizing agents

Hazardous Decomposition: Ammonia Gas

Hazardous Polymerization: Will not occur

VII SPILL OR LEAK PROCEDURES

Steps to be Taken in Case Material is Released or Spilled: Wear appropriate protective gear. Isolate spill area and provide ventilation. 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 Local, State and Federal regulations.

VIII SPECIAL PROTECTION INFORMATION

Respiratory Protection: Use a NIOSH/MSHA approved air purifying respirator with appropriate cartridge.

Ventilation: Handle under dry argon. Use local exhaust to maintain concentration at low exposure levels. Mechanical (General) exhaust is recommended

Protective Gloves: Rubber gloves

Eye Protection: Safety glasses

Protective Clothing: Protective gear suitable to prevent contamination

IX SPECIAL PRECAUTIONS

Precautions to Be Taken in Handling and Storing: Handle under dry argon. Keep container tightly sealed. Store in cool, dry area, in tightly sealed containers. Store away from water/moisture. Store away from oxidizing agents. Store under dry inert gas. Ensure good ventilation at the work place. Wash thoroughly after handling.

Work 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.

The above information is believed to be correct, but does not purport to be all inclusive and shall be used only as a guide. ESPI shall not be held liable for any damage resulting from handling or from contact with the above product.

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