

# MATERIAL SAFETY DATA SHEET

This form may be used to comply with OSHA's Hazard Communication Standard, 29 CFR 1910.1200.  
IDENTITY (As Used on Label and List): **Gallium nitride, powder and pieces**

Product Code: **G-MSDS0032** Reference #: **25617-97-4**

## SECTION I - PRODUCT IDENTIFICATION Gallium nitride, powder and pieces

### MANUFACTURER NAME AND ADDRESS:

ProChem, Inc.  
826 Roosevelt Rd.  
Rockford IL 61109

### TELEPHONE NUMBERS:

CHEMTREC	(800)424-9300
ProChem, Inc.	(800) 795-8788
Local Poison/Emrgncy	( ) - 911

### DATES:

Date Created:  
12/21/1990  
Revision: 12/29/1994  
Printed: 01/28/2004

### SYNONYMS

Gallium nitride, gallium mononitride

CHEMICAL FAMILY: Metal nitride

DOT HAZARD LABEL: No data.

FORMULA: GaN

MOLECULAR WEIGHT: 83.73

## SECTION II - HAZARDOUS INGREDIENTS/IDENTITY INFORMATION Gallium nitride, powder and pieces

### HAZARDOUS COMPONENTS (CHEMICAL NAME)

<u>NAME:</u>	Gallium nitride	<u>PERCENTAGE:</u>	0.0 -100.0 %
<u>CAS #:</u>	25617-97-4	<u>ACGIH TLV:</u>	NE
<u>OSHA PEL:</u>	NE	<u>SEC.304 RO:</u>	No
<u>OTHER LIMITS:</u>	NE		
<u>SEC.302 (EHS):</u>	No		
<u>SEC.313:</u>	No		

<u>NAME:</u>	See SECTION IX-ADDITIONAL COMMENTS FOR COSHH Regulations	<u>PERCENTAGE:</u>	0.0 -100.0 %
<u>CAS #:</u>	NA	<u>ACGIH TLV:</u>	No data.
<u>OSHA PEL:</u>	No data.	<u>SEC.304 RO:</u>	No
<u>OTHER LIMITS:</u>	No data.		
<u>SEC.302 (EHS):</u>	No		
<u>SEC.313:</u>	No		

## SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS Gallium nitride, powder and pieces

**PHYSICAL STATES:**

[ ] Gas , [ ] Liquid , [ X ] Solid

**BOILING POINT:**

N.A.

**MELTING POINT:**

800.00 C (1472.0 F)

**SPECIFIC GRAVITY (WATER = 1):**

6.1 gm/cc

**DENSITY:**

No data.

**VAPOR PRESSURE (VS. AIR OR MM HG):**

NA

**VAPOR DENSITY (VS. AIR = 1):**

NA

**EVAPORATION RATE (VS BUTYL ACETATE=1):**

NA

**SOLUBILITY IN WATER:**

insoluble

**PERCENT VOLATILE:**

N.A.

**PH:**

No data.

**APPEARANCE AND ODOR**

Dark grey powder and pieces, slight ammonia odor in moist air.

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**SECTION IV - FIRE AND EXPLOSION HAZARD DATA**  
**Gallium nitride, powder and pieces**

**FLASH PT:** N.A. **METHOD USED:** NON-FLAMMABLE

**EXPLOSIVE LIMITS:** LEL: NA UEL: NA

**EXTINGUISHING MEDIA**

USE: Not applicable. 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 AND EXPLOSION HAZARDS**

When heated to decomposition, gallium nitride may emit toxic fumes of ammonia.

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**SECTION V - REACTIVITY DATA**  
**Gallium nitride, powder and pieces**

**STABILITY:** Unstable [ ] Stable [ X ]

**CONDITIONS TO AVOID - INSTABILITY**

None

**INCOMPATIBILITY - MATERIALS TO AVOID**

None recorded

**HAZARDOUS DECOMPOSITION OR BYPRODUCTS**

Ammonia gas

**HAZARDOUS POLYMERIZATION:** Will occur [ ] Will not occur [ X ]  
**CONDITIONS TO AVOID - HAZARDOUS POLYMERIZATION**

None

**SECTION VI - HEALTH HAZARD DATA**  
**Gallium nitride, powder and pieces**

**ROUTE(S) OF ENTRY:** Inhalation? Yes , Skin? Yes , Eyes? Yes , Ingestion? Yes , Other: N  
**HEALTH HAZARDS (ACUTE AND CHRONIC)**

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

**INHALATION:**

Acute: May cause irritation to the nose, throat and mucous membranes.  
Chronic: May cause depression of bone marrow function.

**INGESTION:**

Acute: May cause nausea, vomiting and anorexia.  
Chronic: No chronic health effects recorded.

**SKIN:**

Acute: May cause irritation.  
Chronic: May cause dermatitis and depression of bone marrow function.

**EYE:**

Acute: May cause irritation.  
Chronic: No chronic health effects recorded.

**TARGET ORGANS:** No target organs recorded.

**CARCINOGENICITY:** NTP? No , IARC Monographs? No , OSHA Regulated? No  
**CARCINOGENICITY/OTHER INFORMATION**

No data available.

**RECOMMENDED EXPOSURE LIMITS:** See "Section II" **LD 50/LC 50:** No toxicity data recorded.  
**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.

**MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE**

Pre-existing respiratory disorders.

## **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 milk or water; Induce vomiting; Keep warm and quiet; 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.

## **NOTE TO PHYSICIAN**

No data available.

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## **SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE** **Gallium nitride, powder and pieces**

### **STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED**

Wear appropriate respiratory and protective equipment specified in section VIII-control measures. 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.

### **HAZARD LABEL INFORMATION:**

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

### **PRECAUTIONS TO BE TAKEN IN HANDLING**

None

### **PRECAUTIONS TO BE TAKEN IN STORING**

No data available.

### **OTHER PRECAUTIONS**

None

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## **SECTION VIII- CONTROL MEASURES** **Gallium nitride, powder and pieces**

### **PROTECTIVE EQUIPMENT SUMMARY - HAZARD LABEL INFORMATION:**

NIOSH approved respirator    Impervious gloves    Safety glasses  
Clothes to prevent skin contact

### **RESPIRATORY EQUIPMENT (SPECIFY TYPE)**

NIOSH - approved dust respirator

### **VENTILATION:**

**LOCAL EXHAUST:** To maintain concentration at low exposure levels **SPECIAL:** None

**MECHANICAL (GENERAL):** Recommended **OTHER:** None

**EYE PROTECTION**

Safety glasses

**PROTECTIVE GLOVES**

Rubber gloves

**OTHER PROTECTIVE CLOTHING**

Protective gear suitable to prevent contamination

**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.

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**SECTION IX - ADDITIONAL COMMENTS**

**Gallium nitride, powder and pieces**

Control of Substances Hazardous to Health Regulations  
EH40 Occupational Exposure Limits

Maximum Exposure Limit: NE  
Occupational Exposure Standard: NE

The above information is accurate to the best of our knowledge. However, since data, safety standards, and government regulations are subject to change, and the conditions of handling and use or misuse are beyond our control, **PROCHEM MAKES NO WARRANTY, EITHER EXPRESSED NOR IMPLIED, WITH RESPECT TO THE COMPLETENESS OR CONTINUING ACCURACY OF THE INFORMATION CONTAINED HEREIN, AND DISCLAIMS ALL LIABILITY FOR RELIANCE THEREON.** Users should satisfy themselves that they have all current data relevant to their particular use.

Abbreviations used: NA=Not Applicable NE: Not Established

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