



ProChem inc

SUPPLIER

MATERIAL SAFETY DATA SHEET

GENERATED 09/16/2008, REVISION 12/29/1994, DATE CREATED 01/24/1991

SECTION I - PRODUCT IDENTIFICATION
Gallium sulfide GaS, pieces

PRODUCT NAME: Gallium sulfide GaS, pieces

REFERENCE #: 12024-10-1

MANUFACTURER INFORMATION

COMPANY NAME: PROCHEM, INC.

EMERGENCY CONTACT: CHEMTREC (800)424-9300

ALTERNATE EMERGENCY CONTACT: PROCHEM, INC. (815) 398-1788

CHEMICAL FAMILY: Metal sulfide

CAS NUMBER: 12024-10-1

FORMULA: GaS

MOLECULAR WEIGHT: 101.78

SYNONYMS

Gallium sulfide; gallium monosulfide

SECTION II - HAZARDOUS INGREDIENTS/IDENTITY INFORMATION
Gallium sulfide GaS, pieces

Hazardous Components (Chemical Name)	CAS #	Concentration	OSHA PEL	ACGIH TLV	Other Limits
Gallium sulfide	12024-10-1	0.0 -100.0 %	NE	NE	NE

US EPA SARA TITLE III

Hazardous Components (Chemical Name)	CAS #	Sec.302 (EHS)	Sec.304 RQ	Sec.313 (TRI)
Gallium sulfide	12024-10-1	No	No	No

SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS
Gallium sulfide GaS, pieces

PHYSICAL STATES: [] Gas [] Liquid [X] Solid

MELTING POINT: 955.00 C (1751.0 F) - 975.00 C (1787.0 F)

BOILING POINT: N.A.

SPECIFIC GRAVITY (WATER = 1): 3.86 gm/cc at 25.0 C (77.0 F)

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

VAPOR DENSITY (VS. AIR = 1): NA

EVAPORATION RATE (VS BUTYL ACETATE=1): NA
SOLUBILITY IN WATER: decomposes
PERCENT VOLATILE: N.A.
CORROSION RATE: No data.
APPEARANCE AND ODOR

Yellow pieces, rotten egg odor.

SECTION IV - FIRE AND EXPLOSION HAZARD DATA
Gallium sulfide GaS, pieces

FLASH PT: N.A. Method Used: Unknown
EXPLOSIVE LIMITS: LEL: NE UEL: NE
EXTINGUISHING MEDIA

USE: Class D or other suitable metal extinguishing agent.
DO NOT USE: Water.

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

DANGEROUS WHEN WET

When heated to decomposition, gallium sulfide may emit toxic fumes of SO_x. Many sulfides ignite easily in air at room temperature. Others require a higher temperature or presence of an oxidizing agent. May react with water, moisture, steam or acids to produce toxic and flammable vapors or hydrogen sulfide.

SECTION V - REACTIVITY DATA
Gallium sulfide GaS, pieces

STABILITY: Unstable [] Stable [X]

CONDITIONS TO AVOID - INSTABILITY

None

INCOMPATIBILITY - MATERIALS TO AVOID

Water, moisture, steam, acids and oxidizing agents.

HAZARDOUS DECOMPOSITION OR BYPRODUCTS

Oxides of sulfur and hydrogen sulfide.

HAZARDOUS POLYMERIZATION: Will occur [] Will not occur [X]

CONDITIONS TO AVOID - HAZARDOUS POLYMERIZATION

None

SECTION VI - HEALTH HAZARD DATA
Gallium sulfide GaS, pieces

HEALTH HAZARDS (ACUTE AND CHRONIC)

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

Sulfides of the heavy metals are generally insoluble and hence have little toxic action except through the liberation of hydrogen sulfide. (Sax, Dangerous Properties of Industrial Materials, eighth edition)

Hydrogen sulfide is a human poison by inhalation. A severe irritant to the eyes and mucous membranes. An asphyxiant. The irritant action has been explained on the basis that hydrogen sulfide combines with the alkali present in moist surface tissues to form sodium sulfide, a caustic. Hydrogen sulfide does not combine with the hemoglobin of the blood; its asphyxiation is due to paralysis of the respiratory center. It is an insidious poison since sense of smell may be fatigued. The odor and irritating effects do not offer a dependable warning to workers who may be exposed to gradually increasing amounts and therefore become used to it. (Sax, Dangerous Properties of Industrial Materials, eighth edition)

INHALATION:

Acute: May cause irritation to the nose, throat and mucous membranes.

Chronic: May cause depression of bone marrow. Prolonged or repeated exposure may cause pneumoconiosis, coma and pulmonary edema.

INGESTION:

Acute: May cause gastrointestinal irritation.

Chronic: No chronic health effects recorded.

SKIN:

Acute: May cause severe irritation to moist skin due to the liberation of hydrogen sulfide.

Chronic: May cause dermatitis and depression of bone marrow.

EYE:

Acute: May cause severe irritation.

Chronic: No chronic health effects recorded.

TARGET ORGANS: May affect the eyes, skin and respiratory system.

CARCINOGENICITY:

NTP? No IARC Monographs? No OSHA Regulated? No

RECOMMENDED EXPOSURE LIMITS

See "Section II"

LD 50 / LC 50

No toxicity data recorded

SIGNS AND SYMPTOMS OF EXPOSURE

INHALATION: May cause throat dryness, coughing and burning sensation.

INGESTION: May cause nausea and vomiting.

SKIN: May cause redness, itching, inflammation and burning sensation.

EYE: May cause redness, itching, inflammation, watering and burning sensation.

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.

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

SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE Gallium sulfide GaS, 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

OTHER PRECAUTIONS

Gallium sulfide decomposes to hydrogen sulfide in moist air. Handle and store in a controlled environment and in an inert gas such as argon.

SECTION VIII- CONTROL MEASURES Gallium sulfide GaS, pieces
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PROTECTIVE EQUIPMENT SUMMARY - HAZARD LABEL INFORMATION:

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

RESPIRATORY EQUIPMENT (SPECIFY TYPE)

NIOSH - approved dust, mist, vapor cartridge respirator

EYE PROTECTION

Safety goggles

PROTECTIVE GLOVES

Butyl or polycarbonate gloves

OTHER PROTECTIVE CLOTHING

Protective gear suitable to prevent contamination

VENTILATION

Local Exhaust: To maintain concentration at low exposure levels Special: Handle in an enclosed, controlled environment
Mechanical (Gen): Not recommended
Other: Handle in an inert gas such as argon

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.

SECTION IX - ADDITIONAL COMMENTS
Gallium sulfide GaS, pieces

COMPANY POLICY OR DISCLAIMER

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

Health:	— 3	Minimal: 0	GENERATED 09/16/2008 REVISION 12/29/1994 DATE CREATED 01/24/1991
Flammability:	4	Slight: 1	
Reactivity:	2	Moderate: 2	
Protection:	J	Serious: 3	
		Extreme: 4	