STANFORD ADVANCED MATERIALS
http://www.samaterials.com

Stanford Advanced Materials
We not only sell products, we provide satisfactions.
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Tel: (949) 407-8904 Fax: (949) 812-6690

Current Version: 2.0
Revision Date: Sep 5, 2012

Material Safety Data Sheet

Identity: Germanium Sulfide Formula: GeS

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 - HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

Molecular weight: 104.65

CAS #	OSHA PEL	ACGIH TLV	%
12025-32-0	N/A	N/A	0.0 – 100.0

SECTION III – PHYSICAL/CHEMICAL CHARACTERISTICS

Physical States: Solid

Boiling Point: N/A
Melting Point: 530.00 C (986.0 F)
Evaporation Rate: N/A
Solubility in water: Insoluble

Vapor Pressure (vs. air or mmHg): N/A
Density: g/cm^3
Flash Point: N/A

Appearance and odor: Yellow-red powder and pieces, may have a hydrogen sulfide odor in moist air.

SECTION IV - FIRE AND EXPLOSION HAZARD DATA:

Method Used: Unknown *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, germanium sulfide may emit toxic fumes of SOx. Explosive reaction when heated with potassium nitrate.

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SECTION V - REACTIVITY DATA

Stability: Stable
Conditions to Avoid (instability): None
Incompatibility: Potassium nitride

Hazardous Decomposition or Byproducts: Oxides of sulfur
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?

Signs and Symptoms of Overexposure:
Inhalation: May cause throat dryness, coughing and sneezing. Acute germanium toxicity may cause: hypothermia, listlessness, diarrhea, cyanosis, edema and hemorrhage of lungs, petechial hemorrhage in the walls of the small intestines and a peritoneal effusion with is rich in protein. Edematous changes are also seen in the heart muscle and in the perenchymal cells of the liver and kidneys. Chronic germanium toxicity may cause: growth and fatty degeneration of the liver.
Ingestion: May cause nausea and vomiting.
Skin: May cause redness, itching and inflammation.
Eye: May cause redness, itching, inflammation and watering.

Health Hazards (Acute and Chronic):

Inhalation:
Acute: May cause irritation to the nose, throat and mucous membranes and acute germanium toxicity.
Chronic: Prolonged or repeated exposure may cause pneumoconiosis, pulmonary edema and chronic germanium toxicity.

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

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

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

Target Organs: May affect the respiratory system.

Carcinogenicity: NTP? No IARC Monographs? No OSHA Regulated? No
Medical Conditions Aggravated by Exposure:

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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: 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

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 gloves, safety glasses, clothes to prevent contact.

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 or 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