

GELEST, INC.

11 East Steel Rd. Morrisville, PA 19067
Phone: (215) 547-1015

MATERIAL SAFETY
DATA SHEET

EMERGENCY TELEPHONE
CHEMTREC: 1-800-424-9300

NAME USED ON LABEL: **BISMUTH GERMANATE - GEB1700**

CHEMICAL NAME: BISMUTH GERMANATE
SYNONYMS: BISMUTH GERMANIUM OXIDE
CHEMICAL FAMILY: METAL OXIDE
FORMULA: $\text{Bi}_4\text{Ge}_3\text{O}_{12}$

HMIS CODES HEALTH: 1 FLAMMABILITY: 0 REACTIVITY: 0

INGREDIENTS

IDENTITY	CAS NO.	%	TLV
BISMUTH GERMANATE	12233-56-6	>98	not established (OSHA PEL, nuisance dust: 15mg/m ³)

PHYSICAL DATA

Boiling Point: NA
Specific Gravity: 4.7
Vapor Density: NA
% volatiles: 0
Molecular Weight: 1245.68
Appearance & Color: White powder

Melting Point: not determined
Vapor Pressure: not determined
Solubility in water: insoluble
Evaporation rate: NA
Other: NA

FIRE & EXPLOSION DATA

Flash Point, COC: Not Flammable Autoignition Temp.: not ignitable
Flammability Limits- LEL: NA UEL: NA

Extinguishing Media: N/A

Special Fire Fighting Procedures: Avoid eye and skin contact. Do not breathe fumes or inhale vapors.

Unusual Fire and Explosion Hazards: Irritating fumes vapors may develop when material is mixed with other materials and exposed to elevated temperatures or open flame.

-1-(GEB1700)

ENVIRONMENTAL INFORMATION

Spill response: May be hazardous to aquatic life if released to open waters. Sweep material while wearing a dust mask. Transfer to a suitable container for disposal.

Recommended Disposal: Dispose of as solid waste. Follow all chemical pollution control regulations. Large quantities may be recycled by return to the Gelest, the manufacturer.

HEALTH HAZARD DATA

Eye Contact: May cause irritation or conjunctivitis by dissolving to form germanic acid, a weak acid.

Skin contact: Reported to be non-irritating.

Inhalation: Inhalation of particulates of will irritate the respiratory tract. Overexposure may produce coughing, headache and nausea. Inhalation of large amounts is expected to cause necrosis of tracheal epithelium, bronchitis and interstitial pneumonia.

Oral Toxicity: not determined
Acute Toxicity: not determined
Chronic Toxicity: not determined

SUGGESTED FIRST AID

EYES: In case of contact, immediately flush eyes with flowing water for at least 15 minutes. Get medical attention.

SKIN: Flush with water, then wash with soap and water.

INHALATION: Move exposed individual to fresh air. Call a physician.

INGESTION: Never give fluids or induce vomiting if patient is unconscious or having convulsions. Get medical attention.

REACTIVITY DATA

Stability: Stable

Incompatibility (materials to avoid): Compatible with most materials Dissolves in strong acid or base.

Hazardous decomposition products: bismuth oxides, germanium oxides

-2-(GEB1700)

SPECIAL PROTECTION INFORMATION

Ventilation: Local exhaust is required. Mechanical is recommended.

Respiratory Protection: If exposure exceeds TLV, dust mask or air-supplied respirator.

Eye and Face Protection: Chemical worker's goggles. Do not wear contact lenses.

Other Clothing and Equipment: Rubber, neoprene or nitrile gloves. An eyewash and emergency shower should be available. Launder clothing before reuse.

OTHER PRECAUTIONS

For research and industrial use only.

Storage and Handling: Store in sealed containers.

TRANSPORTATION

DOT SHIPPING NAME: CHEMICALS, NOI

DOT HAZARD CLASS: Not Regulated

DOT LABEL: Not Required

DOT ID No: Not Required

Prepared by safety and environmental affairs ISSUE DATE GEB1700: 11/24/03
SUPERSEDES: none

The information contained in this document has been gathered from reference materials and/or Gelest, Inc. test data and is to the best knowledge and belief of Gelest, Inc. accurate and reliable. Such information is offered solely for your consideration, investigation and verification. It is not suggested or guaranteed that the hazard precautions or procedures described are the only ones which exist. Gelest, Inc. makes no warranties, express or implied, with respect to the use of such information and assumes no responsibility therefore.