



LTS Research Laboratories, Inc.  
Safety Data Sheet  
Germanium Antimony Selenide

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1. Product and Company Identification

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Trade Name: Germanium Antimony Selenide  
Chemical Formula: GeSbSe  
Recommended Use: Scientific research and development

Manufacturer/Supplier: LTS Research Laboratories, Inc.  
Street: 37 Ramland Road  
City: Orangeburg  
State: New York  
Zip Code: 10962  
Country: USA  
Tel #: 855-587-2436 / 855-lts-chem

24-Hour Emergency Contact: 800-424-9300 (US & Canada)  
+1-703-527-3887 (International)

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2. Hazards Identification

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Signal Word: Danger



Hazard Statements: H301+H331: Toxic if swallowed or if inhaled  
H373: May cause damage to organs through prolonged or repeated exposure

Precautionary Statements: P260: Do not breathe dust/fume/gas/mist/vapours/spray  
P261: Avoid breathing dust/fume/vapor  
P264: Wash thoroughly after handling  
P301+P310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician  
P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing  
P405: Store locked up  
P501: Dispose of contents/container in accordance with local/regional/national/international regulations

HMIS Health Ratings (0-4): Powder  
Health: 2  
Flammability: 1  
Physical: 1

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### 3. Composition

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Chemical Family: Inorganic compound  
Additional Names: None

Germanium (Ge):  
Percentage: 0-100 wt%  
CAS #: 7440-56-4  
EC #: 231-164-3

Antimony (Sb):  
Percentage: 100 wt%  
CAS #: 7440-36-0  
EC #: 231-146-5

Selenium (Se):  
Percentage: 0-100 wt%  
CAS #: 7782-49-2  
EC #: 231-957-4

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### 4. First Aid Procedures

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General Treatment: Seek medical attention if symptoms persist.  
Special Treatment: Immediately remove any clothing soiled by the product. Remove breathing apparatus only after contaminated clothing has been completely removed. In case of irregular breathing or respiratory arrest provide artificial respiration.  
Important Symptoms: None  
Inhalation: Remove victim to fresh air. Supply oxygen if breathing is difficult.  
Ingestion: Never induce vomiting or give anything by mouth to an unconscious person. Seek immediate medical attention.  
Skin: Wash affected area with mild soap and water. Remove any contaminated clothing.  
Eyes: Flush eyes with water, blinking often for several minutes. Remove contact lenses if present and easy to do. Continue rinsing

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### 5. Firefighting Measures

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Flammability: Non-flammable, except as powder  
Extinguishing Media: Do not use water for metal fires – use CO<sub>2</sub>, sand, extinguishing powder.  
Spec. Fire Fighting Procedure: Use full-face, self-contained breathing apparatus with full protective clothing to prevent contact with skin and eyes. See section 10 for decomposition products.

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### 6. Accidental Release Measures

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If Material Is Released/Spilled: Wear appropriate respiratory and protective equipment specified in special protection information. 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 disposal. Take care not to raise dust.  
Environmental Precautions: Isolate runoff to prevent environmental pollution.

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## 7. Handling and Storage

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Handling Conditions:	Wash thoroughly after handling.
Storage Conditions:	Store in a cool dry place in a tightly sealed container. Store apart from materials and conditions listed in section 10.
Work/Hygienic Maintenance:	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.
Ventilation:	Provide sufficient ventilation to maintain concentration at or below threshold limit.

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## 8. Exposure Controls and Personal Protection

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Permissible Exposure Limits:	0.5 mg/m <sup>3</sup> as Sb, long-term value 0.2 mg/m <sup>3</sup> as Se, long-term value
Threshold Limit Value:	0.5 mg/m <sup>3</sup> as Sb, long-term value 0.2 mg/m <sup>3</sup> as Se, long-term value
Special Equipment:	None
Respiratory Protection:	Use a respirator with type P100 (USA) or P3 (EN143) cartridges as a backup to engineering controls. Risk assessment should be performed to determine if air-purifying respirators are appropriate. Only use equipment tested and approved under appropriate government standards.
Protective Gloves:	Nitrile rubber, NBR 0.11mm thick
Penetration time of glove material:	480 minutes
Eye Protection:	Safety glasses or goggles
Body Protection:	Protective work clothing. Wear close-toed shoes and long sleeves/pants.

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## 9. Physical and Chemical Characteristics

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Color	N/A
Form:	Powder, Granules, Pellets, Sputtering target, Custom parts
Odor:	N/A
Water Solubility:	N/A
Boiling Point:	N/A
Melting Point:	N/A
Flash Point:	N/A
Autoignition Temperature:	N/A
Density:	N/A
Molecular weight:	273.36 g/mol

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## 10. Reactivity

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Stability:	Stable under recommended storage conditions
Reacts With:	Acids, Halogens, Oxidizing agents
Incompatible Conditions:	None
Hazardous Decomposition Products:	Selenium dioxide (SeO <sub>2</sub> ), Metal oxide fume

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## 11. Toxicological Information

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Potential Health Effects:

Eyes:	May cause irritation
Skin:	Toxic if swallowed
Ingestion:	May cause irritation
Inhalation:	Toxic if inhaled
Chronic:	May cause damage to organs through prolonged or repeated exposure
Signs & Symptoms:	N/A
Aggravated Medical Conditions:	N/A
Median Lethal Dose:	100 mg/kg for rat by mouth as Sb 6700 mg/kg for rat by mouth as Se
Carcinogen:	N/A

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## 12. Ecological Information

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Aquatic Toxicity:	High
Persistent Bioaccumulation Toxicity:	No
Very Persistent, Very Bioaccumulative:	No
Notes:	Toxic for aquatic organism. May cause long lasting harmful effect on aquatic life. Do not allow material to be released to the environment without proper governmental permits. Do not allow product to reach any water sources. Danger to drinking water if even extremely small quantities leak into the ground. Also poisonous for fish and plankton in water bodies. Do not allow undiluted product or large quantities to reach ground water, water course or sewage system. Avoid transfer into the environment.

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## 13. Disposal Considerations

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Dispose of in accordance with local, state, national, and international regulations.

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## 14. Transportation Data

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Hazardous: Hazardous as powder only.



Hazard Class:	9 Miscellaneous dangerous substances and articles
Packing Group:	III
UN Number:	UN3077
Proper Shipping Name:	Environmentally hazardous substance, solid, n.o.s (Germanium Antimony Selenide)

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## 15. Regulatory Information

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Sec 302 Extremely Hazardous:	No
Sec 304 Reportable Quantities:	N/A
Sec 313 Toxic Chemicals:	Yes

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## 16. Other Information

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This safety data sheet should be used in conjunction with technical sheets. It does not replace them. The information given is based on our knowledge of this product, at the time of publication. It is given in good faith. The attention of the user is drawn to the possible risks incurred by using the product for any other purpose other than that for which it was intended. This does not in any way excuse the user from knowing and applying all the regulations governing his activity. It is the sole responsibility of the user to take all precautions required in handling the product. The aim of the mandatory regulations mentioned is to help the user to fulfill his obligations regarding the use of hazardous products.

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