



LTS Research Laboratories, Inc.
Safety Data Sheet
Germanium

1. Product and Company Identification

Trade Name: Germanium
Chemical Formula: Ge
Recommended Use: Scientific research and development

Manufacturer/Supplier: LTS Research Laboratories, Inc.
Street: 2001 Oaks Pkwy
City: Belmont
State: North Carolina
Zip Code: 28012
Country: USA
Tel #: +1 (704) 899 2840

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

2. Hazards Identification

Signal Word: Danger



Hazard Statements: H228: Flammable solid
H361: Suspected of damaging fertility or the unborn child.
H373: May cause damage to organs through prolonged or repeated exposure if swallowed.
H400: Very toxic to aquatic life.
H411: Toxic to aquatic life with long lasting effects.

Precautionary Statements: P201: Obtain special instructions before use.
P202: Do not handle until all safety precautions have been read and understood.
P210: Keep away from heat/ sparks/ open flames/ hot surfaces – No smoking.
P240: Ground/ bond container and receiving equipment.
P241: Use explosion-proof electrical/ ventilating/ lighting/ equipment.
P260: Do not breathe dust/ fumes/ gas/ mist/ vapor/ spray.
P273: Avoid release to the environment.
P280: Wear protective gloves/protective clothing/eye protection/ face protection.
P308 + P313: IF exposed or concerned: Get medical advice/attention.
P370 + P378: In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
P391: Collect spillage.
P405: Store locked up.
P501: Dispose of contents/ container in accordance with local/ regional/ national/ international regulations.

HMIS Health Ratings (0-4):

	Powder	Bulk
Health:	1	0
Flammability:	1	0
Physical:	3	0

3. Composition

Chemical Family:	Metalloid
Additional Names:	None
Germanium (Ge):	
Percentage:	100 wt%
CAS #:	7440-56-4
EC #:	231-164-3

4. First Aid Procedures

General Treatment:	Seek medical attention if symptoms persist.
Special Treatment:	Treat symptomatically.
Important Symptoms:	None
Inhalation:	Remove victim to fresh air. Supply oxygen if breathing is difficult. Seek medical attention.
Ingestion:	Give one to two glasses of water and induce vomiting. Never induce vomiting or give anything by mouth to an unconscious person. Seek medical attention.
Skin:	Wash affected area with mild soap and water. Remove any contaminated clothing. Seek medical attention.
Eyes:	Flush eyes with water, blinking often for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. Seek medical attention.

5. Firefighting Measures

Flammability:	Flammable as powder only.
Extinguishing Media:	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide. Do not use water for metal fires – use 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.

6. Accidental Release Measures

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.

7. Handling and Storage

Handling Conditions:	Wear personal protective equipment/ face protection. Ensure adequate ventilation. Avoid ingestion and inhalation. Avoid dust formation. Do not get into eyes, skin, or on clothing. Work under hood. Keep away from open flames, hot surfaces and sources of ignition.
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.

8. Exposure Controls and Personal Protection

Permissible Exposure Limits:	N/A
Threshold Limit Value:	N/A
Special Equipment:	None
Respiratory Protection:	Dust Respirator, Filter type P3
Protective Gloves:	Nitrile rubber gloves, 0.11 mm thick
Eye Protection:	Safety glasses or goggles
Body Protection:	Flame retardant antistatic protective clothing. Wear close-toed shoes and long sleeves/pants.

9. Physical and Chemical Characteristics

Color	Gray
Form:	Powder, Granules, Pellets, Sputtering target, Custom parts
Odor:	Odorless
Water Solubility:	Insoluble
Boiling Point:	937.2 °C
Melting Point:	2830 °C
Flash Point:	N/A
Autoignition Temperature:	N/A
Density:	5.35 g/cc
Molecular weight:	72.59 g/mol

10. Reactivity

Stability:	Stable under recommended storage conditions.
Reacts With:	Strong oxidizing agents, Halogens.
Incompatible Conditions:	Heat, flames, sparks and direct sunlight. Avoid dust formation.
Hazardous Decomposition Products:	Metal oxide fume, Germanium Oxide

11. Toxicological Information

Potential Health Effects:

Eyes:	May cause irritation
Skin:	May cause irritation
Ingestion:	May cause irritation
Inhalation:	May cause irritation
Chronic:	N/A

Signs & Symptoms: Liver injury may occur., Kidney injury may occur., Blood disorders, Cough, Difficulty in breathing.

Aggravated Medical Conditions: N/A

Median Lethal Dose: > 2000 mg/kg for rat by mouth

Carcinogen: IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

12. Ecological Information

Aquatic Toxicity:	Very toxic.
Persistent Bioaccumulation Toxicity:	N/A
Very Persistent, Very Bioaccumulative:	N/A
Notes:	N/A

13. Disposal Considerations

Dispose of in accordance with local, state, national, and international regulations. Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company.

14. Transportation Data

Hazardous: Hazardous as powder only.



Hazard Class: 4.1 Flammable Solid
Packing Group: II
UN Number: UN3089
Proper Shipping Name: Metal powder, flammable, n.o.s. (Germanium)

15. Regulatory Information

Sec 302 Extremely Hazardous:	No
Sec 304 Reportable Quantities:	No
Sec 313 Toxic Chemicals:	No

16. Other Information

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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