



Germanium (Pieces, Sputtering Targets)

1. Product Identification

Trade Name: Germanium (Pieces, Sputtering Targets)
Chemical Formula: Ge
Recommended Use: Scientific research and development

2. Hazards Identification

Signal Word: None in provided form
Hazard Statements: Not Classified
Precautionary Statements: Not Classified
HMIS Ratings (0-4): Bulk
 Health: 0
 Flammability: 0
 Physical: 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. Move away from dangerous area.
Special Treatment: None
Important Symptoms: None

Inhalation: Remove victim to fresh air. Supply oxygen if breathing is difficult.
Seek medical attention.

Ingestion: Do NOT induce vomiting. Never induce vomiting or give anything by
mouth to an unconscious person. Seek medical attention.

Skin: Wash skin with soap and water. 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.

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5. Firefighting Measures

Flammability:	This product is not flammable,
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. Remove all ignition sources. Evacuate personnel away from dangerous areas.
Environmental Precautions:	Isolate runoff to prevent environmental pollution.

7. Handling and Storage

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.

8. Exposure Controls and Personal Protection

Permissible Exposure Limits:	N/A
Threshold Limit Value:	N/A
Special Equipment:	None
Respiratory Protection:	No specific recommendations. If there is inadequate ventilation, use dust Respirator
Protective Gloves:	Rubber gloves
Eye Protection:	Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).
Body Protection:	Protective work clothing. Wear close-toed shoes and long sleeves/pants.

9. Physical and Chemical Characteristics

Color	Gray
Form:	Granules, Pellets, Evaporation Slugs, Sputtering target, Custom parts
Odor:	Odorless
Water Solubility:	Insoluble
Boiling Point:	937.2 °C

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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:	No known reactivity hazards. Reacts with Halogens, Oxidizing agents
Incompatible Conditions:	In air- Heat, flames, sparks and direct sunlight
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:	N/A
Aggravated Medical Conditions:	N/A

Median Lethal Dose: N/A

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:	N/A
Persistent Bioaccumulation Toxicity:	N/A
Very Persistent, Very Bio-accumulative:	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 (in powder form) is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company.

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14. Transportation Data

Hazardous:	The product in current form is not covered by international regulations on the transport of dangerous goods (IMDG, IATA, DoT).
Hazard Class:	No Transport warning sign required
Packing Group:	Not applicable
UN Number:	Not applicable
Proper Shipping Name:	No Applicable

15. Regulatory Information

Sec 302 Extremely Hazardous:	No
Sec 304 Reportable Quantities:	N/A
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. **No warranty, guarantee or representation is made to its accuracy, reliability or completeness.** These materials should only be handled by, or under the direct supervision of a “technically qualified individual”, as defined in TSCA regulations 40 CFR 710.3(ee). 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.

Document Last Revised: 12/05/2018