

**Safety data sheet**  
according to 1907/2006/EC, Article 31

Printing date 20.07.2021

Revision: 20.07.2021

**SECTION 1: Identification of the substance/mixture and of the company/undertaking**

- **1.1 Product identifier**
- **Trade name:** Germanium powder (99.9999%)
- **Item number:** 93-3230
- **CAS Number:**  
7440-56-4
- **EC number:**  
231-164-3
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**  
No further relevant information available.
- **1.3 Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
Strem Chemicals, Inc.  
7 Mulliken Way  
NEWBURYPORT, MA 01950  
USA  
info@strem.com
- **Further information obtainable from:** Technical Department
- **1.4 Emergency telephone number:**  
EMERGENCY: CHEMTREC: + 1 (800) 424-9300  
During normal opening times: +1 (978) 499-1600

**SECTION 2: Hazards identification**

- **2.1 Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**



GHS02 flame

Flam. Sol. 2 H228 Flammable solid.

- **2.2 Label elements**
- **Labelling according to Regulation (EC) No 1272/2008**  
The substance is classified and labelled according to the CLP regulation.
- **Hazard pictograms**



GHS02

- **Signal word** Warning
- **Hazard statements**  
H228 Flammable solid.
- **Precautionary statements**
  - P101 If medical advice is needed, have product container or label at hand.
  - P102 Keep out of reach of children.
  - P103 Read label before use.
  - P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
  - P280 Wear protective gloves/protective clothing/eye protection/face protection.
  - P240 Ground/bond container and receiving equipment.
  - P241 Use explosion-proof electrical/ventilating/lighting equipment.
  - P403+P233 Store in a well-ventilated place. Keep container tightly closed.

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- P501 Dispose of contents/container in accordance with local/regional/national/international regulations.
- **2.3 Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

### **SECTION 3: Composition/information on ingredients**

- **3.1 Chemical characterisation: Substances**
- **CAS No. Description**  
7440-56-4 none
- **Identification number(s)**
- **EC number:** 231-164-3

### **SECTION 4: First aid measures**

- **4.1 Description of first aid measures**
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:** Generally the product does not irritate the skin.
- **After eye contact:** Rinse opened eye for several minutes under running water.
- **After swallowing:** If symptoms persist consult doctor.
- **4.2 Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **4.3 Indication of any immediate medical attention and special treatment needed**  
No further relevant information available.

### **SECTION 5: Firefighting measures**

- **5.1 Extinguishing media**
- **Suitable extinguishing agents:** Use fire extinguishing methods suitable to surrounding conditions.
- **5.2 Special hazards arising from the substance or mixture** No further relevant information available.
- **5.3 Advice for firefighters**
- **Protective equipment:** No special measures required.

### **SECTION 6: Accidental release measures**

- **6.1 Personal precautions, protective equipment and emergency procedures**  
Wear protective equipment. Keep unprotected persons away.
- **6.2 Environmental precautions:** No special measures required.
- **6.3 Methods and material for containment and cleaning up:**  
Dispose contaminated material as waste according to item 13.  
Ensure adequate ventilation.
- **6.4 Reference to other sections**  
See Section 7 for information on safe handling.  
See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.

### **SECTION 7: Handling and storage**

- **7.1 Precautions for safe handling** No special precautions are necessary if used correctly.

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- **Information about fire - and explosion protection:**  
Keep ignition sources away - Do not smoke.  
Protect against electrostatic charges.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** Keep container tightly sealed.
- **7.3 Specific end use(s)** No further relevant information available.

**SECTION 8: Exposure controls/personal protection**

- **Additional information about design of technical facilities:** No further data; see item 7.
- **8.1 Control parameters**
- **Ingredients with limit values that require monitoring at the workplace:** Not required.
- **Additional information:** The lists valid during the making were used as basis.
- **8.2 Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:** Wash hands before breaks and at the end of work.
- **Respiratory protection:** Not required.
- **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.  
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

- **Material of gloves**  
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.
- **Penetration time of glove material**  
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **Eye protection:** Safety glasses

**9.1 Information on basic physical and chemical properties**

**General Information**

**Appearance:**

- **Form:** Powder
- **Colour:** Light grey
- **Odour:** Odourless
- **Odour threshold:** Not determined.

· **pH-value:** Not applicable.

**Change in condition**

- **Melting point/freezing point:** 937.4 °C
- **Initial boiling point and boiling range:** 2.830 °C

· **Flash point:** Not applicable.

· **Flammability (solid, gas):** Flammable.

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|   |                         |
|---|-------------------------|
| · <b>Ignition temperature:</b>  |                         |
| · <b>Decomposition temperature:</b>                                       | Not determined.         |
| · <b>Auto-ignition temperature:</b> Not determined.                       |                         |
| · <b>Explosive properties:</b> Not determined.                            |                         |
| · <b>Explosion limits:</b>  |                         |
| · <b>Lower:</b>   | Not determined.         |
| · <b>Upper:</b>   | Not determined.         |
| · <b>Vapour pressure:</b> Not applicable.                                 |                         |
| · <b>Density at 20 °C:</b>  | 5.323 g/cm <sup>3</sup> |
| · <b>Relative density</b>   | Not determined.         |
| · <b>Vapour density</b>   | Not applicable.         |
| · <b>Evaporation rate</b>   | Not applicable.         |
| · <b>Solubility in / Miscibility with water:</b> Insoluble.               |                         |
| · <b>Partition coefficient: n-octanol/water:</b> Not determined.          |                         |
| · <b>Viscosity:</b>   |                         |
| · <b>Dynamic:</b>   | Not applicable.         |
| · <b>Kinematic:</b>   | Not applicable.         |
| · <b>Solvent content:</b>   |                         |
| · <b>Organic solvents:</b>  | 0.0 %                   |
| · <b>VOC (EC)</b>   | 0.00 %                  |
| · <b>Solids content:</b> 100.0 %  |                         |
| · <b>9.2 Other information</b> No further relevant information available. |                         |

### SECTION 10: Stability and reactivity

- **10.1 Reactivity** No further relevant information available.
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **10.3 Possibility of hazardous reactions** No dangerous reactions known.
- **10.4 Conditions to avoid** No further relevant information available.
- **10.5 Incompatible materials:** No further relevant information available.
- **10.6 Hazardous decomposition products:** No dangerous decomposition products known.

### SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity** Based on available data, the classification criteria are not met.
- **Primary irritant effect:**
- **Skin corrosion/irritation** Based on available data, the classification criteria are not met.
- **Serious eye damage/irritation** Based on available data, the classification criteria are not met.
- **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**
- **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
- **Carcinogenicity** Based on available data, the classification criteria are not met.

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- **Reproductive toxicity** Based on available data, the classification criteria are not met.
- **STOT-single exposure** Based on available data, the classification criteria are not met.
- **STOT-repeated exposure** Based on available data, the classification criteria are not met.
- **Aspiration hazard** Based on available data, the classification criteria are not met.


**SECTION 12: Ecological information**

- **12.1 Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **12.2 Persistence and degradability** No further relevant information available.
- **12.3 Bioaccumulative potential** No further relevant information available.
- **12.4 Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:** Not known to be hazardous to water.
- **12.5 Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **12.6 Other adverse effects** No further relevant information available.

**SECTION 13: Disposal considerations**

- **13.1 Waste treatment methods**
- **Recommendation**  
Must not be disposed together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to official regulations.

**SECTION 14: Transport information**

- |   |                                      |
|---|--------------------------------------|
| · <b>14.1 UN-Number</b>   |                                      |
| · <b>ADR, IMDG, IATA</b>  | UN3089                               |
| · <b>14.2 UN proper shipping name</b>   |                                      |
| · <b>ADR</b>  | 3089 METAL POWDER, FLAMMABLE, N.O.S. |
| · <b>IMDG, IATA</b>   | METAL POWDER, FLAMMABLE, N.O.S.      |
| · <b>14.3 Transport hazard class(es)</b>  |                                      |
| · <b>ADR, IMDG, IATA</b>  |                                      |
|  |                                      |
| · <b>Class</b>  | 4                                    |
| · <b>Label</b>  | 4.1                                  |
| · <b>14.4 Packing group</b>   |                                      |
| · <b>ADR, IMDG, IATA</b>  | III                                  |
| · <b>14.5 Environmental hazards:</b>  |                                      |
| · <b>Marine pollutant:</b>  | No                                   |

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|   |   |
|---|---|
| <ul style="list-style-type: none"> <li>· <b>14.6 Special precautions for user</b></li> <li>· <b>Segregation groups</b></li> <li>· <b>Stowage Category</b></li> <li>· <b>Handling Code</b></li> <li>· <b>Segregation Code</b></li> </ul> | <p>Not applicable.</p> <p>Heavy metals and their salts (including their organometallic compounds), powdered metals</p> <p>A</p> <p>H1 Keep as dry as reasonably practicable</p> <p>SG17 Stow "separated from" class 5.1</p> <p>SG25 Stow "separated from" goods of classes 2.1 and 3.</p> <p>SG26 In addition: from goods of classes 2.1 and 3 when stowed on deck of a containership a minimum distance of two container spaces athwartship shall be maintained, when stowed on ro-ro ships a distance of 6 m athwartship shall be maintained.</p> |
| <ul style="list-style-type: none"> <li>· <b>14.7 Transport in bulk according to Annex II of Marpol and the IBC Code</b></li> </ul>  | <p>Not applicable.</p>  |
| <ul style="list-style-type: none"> <li>· <b>Transport/Additional information:</b></li> </ul>  |   |
| <ul style="list-style-type: none"> <li>· <b>ADR</b></li> <li>· <b>Limited quantities (LQ)</b></li> <li>· <b>Excepted quantities (EQ)</b></li> </ul>   | <p>5 kg</p> <p>Code: E1</p> <p>Maximum net quantity per inner packaging: 30 g</p> <p>Maximum net quantity per outer packaging: 1000 g</p>   |
| <ul style="list-style-type: none"> <li>· <b>IMDG</b></li> <li>· <b>Limited quantities (LQ)</b></li> <li>· <b>Excepted quantities (EQ)</b></li> </ul>  | <p>5 kg</p> <p>Code: E1</p> <p>Maximum net quantity per inner packaging: 30 g</p> <p>Maximum net quantity per outer packaging: 1000 g</p>   |
| <ul style="list-style-type: none"> <li>· <b>UN "Model Regulation":</b></li> </ul>   | <p>UN 3089 METAL POWDER, FLAMMABLE, N.O.S., 4.1, III</p>  |

**SECTION 15: Regulatory information**

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Directive 2012/18/EU**
- **Named dangerous substances - ANNEX I Substance is not listed.**
- **15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.**

**SECTION 16: Other information**

*This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.*

- **Department issuing SDS: Technical Department.**
- **Contact: Technical Director**
- **Abbreviations and acronyms:**  
 ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)  
 IMDG: International Maritime Code for Dangerous Goods  
 IATA: International Air Transport Association  
 GHS: Globally Harmonised System of Classification and Labelling of Chemicals  
 EINECS: European Inventory of Existing Commercial Chemical Substances  
 CAS: Chemical Abstracts Service (division of the American Chemical Society)  
 VOC: Volatile Organic Compounds (USA, EU)  
 PBT: Persistent, Bioaccumulative and Toxic

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vPvB: very Persistent and very Bioaccumulative  
Flam. Sol. 2: Flammable solids – Category 2

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