

## SPI Supplies Division

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Manufacturer's CAGE: 1P573

## Safety Data Sheet

Date Effective: April 24, 2018

SPI Catalog # 01812-AF

SPI Chem™ Germanium Chips for Shadow Casting

### Section 1.1: Identification

Chemical Name/Synonyms ..... Germanium metal chips

Product or Trade Name ..... SPI Chem™ Germanium Chips for Shadow Casting

CAS #'s ..... 7440-56-4

Chemical Formula..... Ge

### Section 1.2: Relevant Uses/Restrictions

Germanium metal chips for shadow casting in microscopy.

### Section 1.3: Supplier of the Safety Data Sheet

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### Section 1.4: Emergency telephone number

Emergencies

Contacting CHEMTREC:

24 Hour Emergency Use Only #'s...

Worldwide phone: 1-(703)-741-5970

Toll-free phone: 1-(800)-424-9300 USA + Canada only

### Section 2: Hazard Identification

#### 2.1 Classification of the substance

Not a hazardous substance or mixture.

#### 2.2 Label elements

Not a hazardous substance or mixture.

**2.3 Other Hazards:** none

**Hazardous Material Information System USA**

Health ..... 2  
Fire Hazard ..... 0  
Reactivity ..... 0  
Personal Protection .....

**NFPA Rating (estimated)**

Health ..... 2  
Flammability..... 0  
Reactivity ..... 0

**Section 3: Composition**

**3.1 Substances:**

Germanium    CAS # 7440-56-4    EC No. 231-164-3    99.9%    MW: 72.64 g/mol

**Section 4: First Aid Measures**

**4.1 Description of first aid measures:**

**General Advise:** Move out of dangerous area.

**Inhalation:** If inhaled, move person to fresh air. If not breathing, give artificial respiration.

**Skin Contact:** In case of skin contact, wash off with soap and plenty of water.

**Eye Contact:** In case of eye contact, flush eyes with water as a precaution.

**Ingestion:** Never give anything by mouth to an unconscious person. Rinse mouth with water if conscious.

**4.2 Most important symptoms and effects, both acute and delayed:** The most important known symptoms and effects are described in the labelling (see Section 2) and/or in Section 11.

**4.3 Indication of any immediate medical attention and special treatment needed:** No data available.

**Section 5: Fire Fighting Measures**

**5.1 Extinguishing media:** Use water spray, alcohol-resistant foam, dry chemical, or carbon dioxide.

**5.2 Special hazards arising from the substance or mixture:** No data available.

**5.3 Advice for firefighters:** Wear self-contained breathing apparatus for fire-fighting if necessary.

**Further information:** No data available.

**Section 6: Accidental Release Measures**

**6.1 Personal precautions:**

Avoid dust formation.  
Avoid breathing vapors, mist, or gas.

**6.2 Environmental precautions:** No special environmental precautions required.

**6.3 Methods and material for containment and cleaning up:**

Sweep up and shovel.  
Keep in suitable, closed containers for disposal.

**6.4 Reference to other sections:**

For personal protection see Section 8.  
For disposal see Section 13.

## ***Section 7: Handling and Storage***

**7.1 Precautions for safe handling:**

Further processing of solid materials may result in the formation of combustible dusts.  
The potential for combustible dust formation should be taken into consideration before additional processing occurs.

Provide appropriate exhaust ventilation at places where dust is formed.  
For precautions see Section 2.2.

**7.2 Conditions for safe storage, including any incompatibilities:**

Keep container tightly closed in a dry and well-ventilated place.

**7.3 Specific end uses:**

Germanium metal chips for shadow casting in microscopy.  
This material is not being offered for clinical or diagnostic applications, agricultural uses or for human or animal consumption.

## ***Section 8: Exposure Controls and Personal Protection***

**8.1 Control parameter and Personal Protection:**

**Workplace exposure limits:** Contains no substances with occupational exposure limit values.

**Biological limit values:** No data available.

**8.2 Exposure controls:**

**8.2.1 Appropriate engineering controls:** General industrial hygiene practice.

**8.2.2 Individual protection measures:**

Breathing equipment: Not required.

Protection of hands: Handle with gloves. Nitrile rubber, Minimum thickness 0.11 mm.

Eye protection: Safety glasses, tested and approved under appropriate government standards such as NIOSH (US) or EN 166 (EU).

**8.2.3 Environmental exposure controls:** No special environmental precautions required.

## ***Section 9: Physical and Chemical Properties***

### 9.1 Information on basic physical and chemical properties:

**Appearance:** Silver colored chips

**Odor:** Odorless

**Odor threshold:** No data available

**pH:** No data available

**Melting point/Freezing point:** 937 °C (1,719 °F)

**Boiling point/Boiling point range:** 2,830 °C (5,126 °F)

**Flash Point:** Not applicable

**Evaporation rate:** No data available

**Flammability (solid, gas):** No data available

**Upper/lower flammability or explosive limits:** No data available

**Vapor Pressure:** No data available

**Vapor density:** No data available

**Relative density:** 6.35 g/ml at 25 °C (77 °F)

**Solubility:** Insoluble

**Partition coefficient (n-octanol/water):** No data available

**Auto-ignition temperature:** No data available

**Decomposition temperature:** No data available

**Viscosity:** No data available

**Explosive properties:** No data available

**Oxidizing Properties:** No data available

**9.2 Other information:** No data available

## ***Section 10: Stability and Reactivity***

**10.1 Reactivity:** No data available

**10.2 Chemical Stability:** Stable under recommended storage conditions.

**10.3 Possibility of Hazardous Reactions:** No data available

**10.4 Conditions to avoid:** No data available

**10.5 Incompatible materials:** Strong oxidizing agents; Halogens; Water; Sulfuric acid; Molten alkali metals; Nitrates; Carbonates.

**10.6 Hazardous decomposition products:**

Hazardous decomposition products formed under fire conditions: Germanium oxides.

Other decomposition products: No data available.

In the event of fire: See Section 5.

## **Section 11: Toxicological Information**

### **Information on the likely routes of exposure:**

#### **11.1 Information on toxicological effects:**

**A. Acute toxicity:** No data available.

**B. Skin corrosion/irritation:** No data available.

**C. Serious eye damage/irritation:** No data available.

**D. Respiratory or skin sensitization:** No data available.

**E. Germ cell mutagenicity:** No data available.

#### **F. Carcinogenicity:**

**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.

**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.

**G. Reproductive toxicity:** No data available.

**H. STOT-single exposure:** No data available.

**I. STOT-repeated exposure:** No data available.

**J. Aspiration hazard:** No data available.

#### **Additional Information:**

RTECS: LY5200000

Liver injury may occur; Kidney injury may occur; Blood disorders; Cough; Difficulty in breathing.

Stomach – Irregularities – Based on Human Evidence.

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

## **Section 12: Ecological Information**

**12.1 Toxicity:** No data available.

**12.2 Persistence and degradability:** No data available.

**12.3 Bio-accumulative potential:** No data available.

**12.4 Mobility in soil:** No data available.

**12.5 Results of PBT and vPvB assessment:** PBT/vPvB assessment not available as chemical safety assessment not required/ not conducted.

**12.6 Other adverse effects:** No data available.

### ***Section 13: Disposal Considerations***

#### **13.1 Waste treatment methods:**

**Product:** Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

**Contaminated packaging:** Dispose of as unused product.

### ***Section 14: Transport Information***

**DOT:** Not dangerous goods.

**IATA:** Not dangerous goods.

**IMDG:** Not dangerous goods.

### ***Section 15: Regulatory Information***

#### **15.1 Safety, health and environmental regulations/ legislation specific for the substance or mixture:**

##### **U.S. Government Regulations:**

##### **SARA 302 Components:**

No chemicals in this material are subject to the reporting requirements of SAFA Title III, Section 302.

##### **SARA 313 Components:**

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

##### **SARA 311/312 Hazards:**

Acute Health Hazard  
Chronic Health Hazard

##### **State Right-to-Know Lists:**

Germanium, CAS No. 7440-56-4, is listed as a Right-to-Know component on the New Jersey and Pennsylvania Right-to-Know Lists.

##### **California Prop. 65 Components:**

This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

##### **REACH**

Substance is listed as a pre-registered substance.

Substance is not listed as a Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006.

Substance is not listed under the conditions of restrictions according to Article 67 and Annex XVII of the Regulation (EC) No. 1907/2006 (REACH) for the manufacturing, placing on the market, and use must be observed.

Substance is not listed in Annex XIV of the REACH Regulations (requiring Authorization for use).

**15.2 Chemical Safety Assessment:** Has not been carried out.

Date of Preparation: 24 April 2018.

**Abbreviations and acronyms**

IMDG: International Maritime Code for Dangerous Goods  
DOT: US Department of Transportation  
CMRG: Chemical Manufacturer's Recommended Guidelines  
IATA: International Air Transport Association  
ACGIH: American Conference of Governmental Industrial Hygienists  
AIHA: American Industrial Hygiene Association  
EINECS: European Inventory of Existing Commercial Chemical Substances  
ELINCS: European List of Notified Chemical Substances  
CAS: Chemical Abstracts Service (division of the American Chemical Society)  
NFPA: National Fire Protection Association (USA)  
HMIS: Hazardous Materials Identification System (USA)  
LC50: Lethal concentration, 50 percent  
LD50: Lethal dose, 50 percent  
PBT: Persistent, Bio-accumulative and Toxicological  
vPvB: very Persistent and very Bio-accumulative  
NIOSH: National Institute for Occupational Safety  
OSHA: Occupational Safety Health  
ATE: Acute Toxicity Estimates  
TLV: Threshold Limit Value  
PEL: Permissible Exposure Limit  
REL: Recommended Exposure Limit  
STEL: Short Term Exposure Limit  
CEIL: Ceiling

**Section 16: Other Information**

**Disclaimer of Liability:**

Caution! Do not use SPI Supplies products or materials in applications involving implantation within the body; direct or indirect contact with the blood pathway; contact with bone, tissue, tissue fluid, or blood; or prolonged contact with mucous membranes. Products offered by SPI Supplies are not designed or manufactured for use in implantation in the human body or in contact with internal body fluids or tissues. SPI Supplies will not provide to customers making devices for such applications any notice, certification, or information necessary for such medical device use required by US FDA (Food and Drug Administration) regulation or any other statute. SPI Supplies and Structure Probe, Inc. make no representation, promise, express warranty or implied warranty concerning the suitability of these materials for use in implantation in the human body or in contact with internal body tissues of fluids.

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