



# Super Conductor Materials, Inc.

391 Spook Rock Industrial Park, Suffern, NY 10901 · 845.368.0240 · Fax 845.368.0250 · www.scm-inc.com

Chemtrec: (800) 424-9300  
Poison Center: (800) 562-8236  
Revision Date: January 8<sup>th</sup>, 2019

## SAFETY DATA SHEET

Identity: Zirconium

Formula: Zr

### SECTION I - GENERAL INFORMATION

Manufacturer: Super Conductor Materials, Inc.

The information below is believed to be accurate and represents the best information available to Super Conductor Materials, Inc. However, SCM makes no warranty, expressed or implied with respect to such information and assumes no liability resulting from its use.

### SECTION II - HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

Molecular weight: 91.22

CAS #	OSHA PEL	ACGIH TLV	%
7440-67-7	5mg/m3	5mg/m3	0.0-100.0%

### SECTION III – PHYSICAL/CHEMICAL CHARACTERISTICS

Physical States: Solid

Boiling Point: 3580°C

Vapor Pressure (vs. air or mmHg): N/A

Melting Point: 1855°C

Density: 6.506 g/cm<sup>3</sup>

Evaporation Rate: N/A

Flash Point: N/A

Solubility in water: Insoluble/

Soluble in cold acids

*Appearance and odor:* Silver to grey metallic powder and pieces, no odor

### SECTION IV - FIRE AND EXPLOSION HAZARD DATA:

*Method Used:* SPONTANEOUSLY COMBUSTIBLE

*Explosive Limits:* LEL: N/A UEL: N/A

*Extinguishing Media:* Use class D or other metal extinguishers, DO NOT USE WATER

#### *Special Fire Fighting Procedures:*

Firefighters must wear full face, self-contained breathing apparatus with full protective clothing to prevent contact with skin and eyes. Fumes from fire are hazardous. Isolate runoff to prevent environmental pollution.

#### *Unusual Fire and Explosion Hazards:*

- Spontaneously combustible in dry powder form.
- Flammable and explosive as dust or powder, also in the form of borings and shavings.
- Zirconium metal is a very dangerous fire hazard in the form of dust when exposed to heat, flame or by chemical reaction with oxidizing agents.
- May be an explosion hazard in the form of dust by chemical reaction with air, alkali hydroxides, alkali metal chromates, dichromates, molybdates, sulfates, tungstates, borax, CCl<sub>4</sub>, Copper oxide, lead, lead oxide, phosphorous, KClO<sub>3</sub>, KNO<sub>3</sub>, nitryl fluoride.
- May be extremely sensitive to shock and static electricity cause spontaneous ignition.



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## SECTION V - REACTIVITY DATA

*Stability:* Unstable

*Conditions to Avoid (stability):* Shock, and static electricity

*Incompatibility:* Strong oxidizing agents, air, alkali hydroxides, alkali metal chromates, dichromates, molybdates, sulfates, tungstates, borax, CCL<sub>4</sub>, copper oxide, lead, lead oxide, phosphorous, KClO<sub>3</sub>, KNO<sub>3</sub>, nitrylfluoride and acids

*Hazardous Decomposition or Byproducts:* None recorded

*Hazardous Polymerization:* Will not occur

*Conditions to avoid (hazardous polymerization):* None

## SECTION VI - HEALTH HAZARD DATA

*Route of Entry:* Inhalation? Yes    Ingestion? Yes    Skin? Yes    Eyes? Yes    Other? No

To the best of our knowledge the chemical, physical and toxicological properties of zirconium have not been thoroughly investigated and recorded.

Zirconium compounds are not an important industrial poison. Most zirconium compounds in common use are insoluble and considered inert. Pulmonary granuloma in zirconium workers has been reported.

### Sign and Symptoms of Overexposure:

*Inhalation:* May cause red, dry throat, coughing, sneezing and difficulty breathing.

*Ingestion:* May cause burning sensation.

*Skin:* May cause redness and itching.

*Eye:* May cause redness, itching and watering.

### Health Hazards (Acute and Chronic):

#### *Inhalation:*

Acute: May cause irritation to the respiratory tract, mucous membranes or the nose and throat.

Chronic: No chronic health effects recorded.

#### *Ingestion:*

Acute: May cause irritation to the gastrointestinal tract.

Chronic: No chronic health effects recorded.

#### *Skin:*

Acute: May cause irritation.

Chronic: May cause skin granulomas.

#### *Eye:*

Acute: May cause irritation.

Chronic: No chronic health effects recorded.

*Target Organs:* May affect the respiratory system and skin

*Carcinogenicity:* NTP? No                      IARC Monographs? No

OSHA Regulated? No

*Medical Conditions Aggravated by Exposure:* Pre-existing respiratory disorders

### Emergency and First Aid Procedures:

*Inhalation:* Remove victim to fresh air, keep warm and quiet, and give oxygen if breathing is difficult; seek medical attention

*Ingestion:* Give 1-2 glasses of milk or water and induce vomiting, seek medical attention. Never induce vomiting or give anything by mouth to an unconscious person

*Skin:* Remove contaminated clothing, brush material off skin, wash affected area with mild soap and water, and seek medical attention if symptoms persist



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*Eye:* Flush eyes with lukewarm water, lifting upper and lower eyelids for at least 15 minutes and seek medical attention

### SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE

*Steps to be taken in case material is released or spilled:*

Wear appropriate respiratory and protective equipment specified in section VIII. Isolate spill area, provide ventilation and extinguish sources of ignition. Vacuum up spill using a high efficiency particulate absolute (HEPA) air filter and place in a closed container for proper disposal. Take care not to raise dust.

*Waste disposal method:*

Dispose of in accordance with state, local, and federal regulations.

*Hazard Label Information:*

Store in cool, dry area and in tightly sealed container. Wash thoroughly after handling.

*Precautions:*

If particle size is less than 9 microns handle and store under 30% water. If particle size is greater than 9 microns but less than 250 microns handle and store under argon.

### SECTION VIII - CONTROL MEASURES

*Protective Equipment Summary (Hazard Label Information):*

NIOSH approved respirator, impervious rubber gloves, safety glasses, clothes to prevent contact.

*Ventilation:*

Local Exhaust: To maintain concentration at low exposure levels.

Mechanical (General): NOT Recommended.

*Work/Hygienic/Maintenance Practices:*

Implement engineering and work practice controls to reduce and maintain concentration of exposure at low levels. Use good housekeeping and sanitation practices. Do not use tobacco or food in work area. Wash thoroughly before eating or smoking. Do not blow dust off clothing or skin with compressed air.

Please be advised that N/A can either mean Not Applicable or No Data Has Been Established