

15117 Washington Highway  
P. O. Box 1055 Ashland VA

Phone: (804) 227-3381  
Fax: (804) 227-3404

CHEMTREC: (800) 424-9300  
Poison Center: (800) 562-8236

## Safety Data Sheet

### Section 1: Product and Company Information

Product Name: Zirconium  
Company: Fine Metals Corporation  
15117 Washington Hwy  
Ashland, VA 23005

For more information call: 1-804-227-3381  
(Monday - Friday 9-4:30)

**In case of emergency: Transportation (Chemtrec) 1-800-424-9300**  
**Poison Center: 1-800-562-8236**  
(24 hours/day, 7 days/week)

### Section 2: HAZARD IDENTIFICATION

**This material is not considered hazardous and is not classified under GHS**

#### Emergency Overview

Emergency Negligible fire or explosion hazard in form sold (solid). Powdered material may form explosive dust-air mixtures.

Hazard Statements: None

#### Precautionary Statements:

Prevention: None

Response: None

#### Appearance/Form:

Form: Solid

Color: Grey similar to stainless steel

Odor: None

Hazard Summary: This substance is not considered hazardous in the form supplied. Dusts at sufficient concentrations can form explosive mixtures in air.

#### Acute Health Effects

Skin: May cause skin irritation.

Eyes: May cause eye irritation.

Ingestion: If ingested it may cause irritation to the gastrointestinal tract. Low ingestion hazard in normal use.

Inhalation: If inhaled it may cause irritation to the respiratory tract, mucous membranes or the nose and throat.

**Chronic Exposure:** Skin: May cause skin granulomas. No other chronic health effects recorded.

**Aggravated Medical Conditions:** None expected.

**Carcinogenicity:** Not considered carcinogenic by NTP, IARC or OSHA.

# Safety Data Sheet

## Section 3: Composition/Information on Ingredients

Chemical Name	CAS-No.		Reach #	
Zirconium	7440-67-7	Not available	Not available	>99 wt%
				wt%

## Section 4: FIRST AID MEASURES

Eye Contact: Flush with plenty of water for at least 15 minutes. Seek medical attention.  
Skin Contact: Brush material off gently and wash with mild soap and water. Get medical attention, if irritation persists.  
Inhalation: Remove individual to fresh air. Seek medical attention if difficulty breathing develops  
Ingestion: Seek medical attention. Treat symptomatically

## Section 5: FIRE FIGHTING MEASURES

**Suitable extinguishing Media:** Use Class D extinguishing agents, dry sand, dolomite or soda ash.

**Unsuitable extinguishing media:** DO NOT use water, carbon dioxide or halocarbon extinguishing agent.

**Specific hazards during firefighting:** Dusts at sufficient concentrations can form explosive mixtures in air. May form toxic metal fumes in fire.

**Special protective equipment for firefighters:** As in any fire, wear self-contained breathing apparatus pressure-demand, (MSHA/NIOSH approved or equivalent) and full protective gear. It may be advisable to isolate the burning zirconium and allow it to burn out. Do not use water.

## Section 6: ACCIDENTAL RELEASE MEASURES

**Personal Precautions:** Avoid breathing (dust, vapor, mist, gas). Practice good chemical hygiene during and after use.

**Environmental Precautions:** Do not release to the environment.

**Methods for Cleaning Up:** Sweep up spilled solids, powder and fines. Keep finely divided zirconium away from any source of ignition and cleanup immediately. During cleanup avoid generation of dust.

## Section 7: HANDLING AND STORAGE

**Handling:** Wash thoroughly after using, particularly before eating or smoking. Avoid breathing dust or fumes. Do not ingest. Avoid formation of dust. Keep away from heat and flame.

**Storage:** Store away from incompatible material. Any material with a dimension less than .002 inch is flammable, keep away from any source of ignition. Do not accumulate large quantities of fines or machine residues. Dispose of these materials daily. Keep fine turnings completely dry or very wet. If wet, the water content should be more than 25% by weight for maximum safety in handling. Severe explosions can result from ignition of zirconium powder or machining fines containing moisture in the concentration range of 5 to 10%.

## Section 8: EXPOSURE CONTROL/PERSONAL PROTECTION

**Engineering Controls:** Use process enclosures, local exhaust ventilation or other means to maintain employee exposure as far below limits as possible

### Component Exposure Limits

Component	Location	Value
Zirconium	ACGIH TLV TWA	5
	OSHA OEL TWA	5
	NIOSH REL TWA	5
	NIOSH REL STEL	10
	Canada - AB, BC, ON, PQ	5
	Canada - AB, BC, ON, PQ	10
	Europe TWA	5
	Europe STEL	10

Zirconium  
4/27/2015 2:31:21 PM

Date:  
Page 2 of 5

# Safety Data Sheet

UK WEL TWA 5

UK WEL STEL 10

**Engineering Controls:** Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.

**Respiratory Protection:** Not normally needed. If ventilation is inadequate and this material is handled at elevated temperatures or dust/fumes/mists are generated a NIOSH/MSHA approved air purifying respirator may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits.

**Eye/Face:** Wear safety glasses or goggles as appropriate to the task performed.

**Skin Protection:** Use of gloves advisable to avoid cuts. Evaluate each situation for possibility of flash burns. Work areas must be periodically cleaned to avoid accumulation of flammable dust. If dust has accumulated, wear reflective heat-resistant suit while

**Work Hygienic Practices:** Practice good chemical hygiene during and after use.

**Comments:** None

## Section 9: PHYSICAL AND CHEMICAL PROPERTIES

**Physical State:** Solid

**Odor:** None

**Color:** Grey

**Melting Point:** 1852° C

**Boiling Point:** 4377° C

**Vapor Pressure:** 0 @ 20° C

**Vapor Density (air = 1):** N/A

**Evaporation Rate:** N/A

**Solubility In Water:** Insoluble

**Specific Gravity (water = 1):** 6.52

**Atomic Weight:** 91.224

**% Volatility By Volume:** No information available

**Density:** 6.52

## Section 10: STABILITY AND REACTIVITY

**Stability:** Stable under normal conditions and usage.

**Incompatible Materials:** Zirconium metal is rapidly dissolved by hydrofluoric acid or hydrofluoric-nitric acid mixtures. Above 2000° C, zirconium hydride reacts exothermically with: fluorine, chlorine, bromine and iodine, and with halocarbons, including carbon tetrachloride, carbon tetrafluoride, and Freons. Nitryl Fluoride, FNO<sub>2</sub> will initiate a reaction with zirconium metal at room temperature to produce a glowing or white incandescence.

**Hazardous Decomposition Products:** Zirconium metal does not decompose. The above reactions with incompatible materials will generate hazardous reaction products such as flammable hydrogen, toxic fumes of nitrogen oxides, or corrosive zirconium halide vapors.

**Possibility of Hazardous Reactions:** No information available

**Reactions:**

## Section 11: TOXICOLOGICAL INFORMATION

**Acute Toxicity:** Zirconium metal is considered nontoxic

**Chronic Toxicity:** Not available

**Reproductive Toxicity:** Not available

**Mutagenicity:** Not available

**Carcinogenicity:** Not listed

**Other:** None

## Section 12: ECOLOGICAL INFORMATION

**Ecotoxicity:** No known environmental hazard

**Persistence/Degradability:** Not available

**Bioaccumulation/Accumulation:** Not available

**Mobility in Environment:** Not available

Zirconium  
4/27/2015 2:31:22 PM

Date:  
Page 3 of 5

# Safety Data Sheet

## Section 13: DISPOSAL CONSIDERATIONS cleannin.

**Waste Classification:** Recycling would be disposal method of choice.

All disposal activities must comply with federal, state, provincial and local regulations.

## Section 14: TRANSPORT INFORMATION

**US DOT (ground):** Not hazardous by D.O.T. regulations

**ICAO/IATA (air):** Not regulated

**IMO/IMDG (water):** Not regulated

**Special Provisions:** None

## Section 15: REGULATORY INFORMATION

### UNITED STATES

**SARA Title III (Superfund Amendments and Reauthorization Act) 313 Reportable Ingredients:** No

**TSCA (Toxic Substance Control Act) status:** Not regulated

### STATE REGULATIONS

The following components appear in one or more of the following states hazardous substances

Component	CAS #	CA	MA	MN	NJ	
Zirconium	7440-67-7	No	Yes	Yes	Yes	Yes
		No	No	No	No	No

**California Proposition 65:** This product is not known to contain any components for which the State of California has found to cause cancer, birth defects or other reproductive harm.

### CANADA

**WHMIS (Workplace Hazardous Materials Information System):** Not regulated

**Domestic Substance List (Inventory):** All components of this product are included in inventory, exempt, or notified

### GENERAL COMMENTS

None

## Section 16: OTHER INFORMATION

**Information Contact:** [sds@finemetalscorp.com](mailto:sds@finemetalscorp.com)

**Issue Date:** 1/3/1996

**Revision Date:** 1/1/2015

# Safety Data Sheet

HMIS® (II)		NFPA	
Health:	0		
Flammability:	1	1	
Reactivity:	0	0	0
PPE:	B		

Ratings range from 0 (no hazard) to 4 (severe hazard)

The information contained in this SDS is believed to be correct, but is not all inclusive and shall be used only as a guide. Fine Metals Corporation shall not be liable for any damage resulting from handling or from contact with the product listed in the SDS. Any comments or questions should be directed to:

Safety Manager  
Fine Metals Corporation  
15117 Washington Highway  
P O Box 1055  
Ashland VA 23005  
(804) 227-3381

