



G&S Titanium, Inc.

SAFETY DATA SHEET

Revised 01/20/2016

SECTION 1: COMPANY AND PRODUCT IDENTIFICATION

MANUFACTURER: G&S Titanium, Inc.
Address: 4000 East Lincoln Way, Wooster, Ohio 44691

Telephone No. (330)263-0564
Emergency No. 800-424-9300 Chemtrec

Trade Name: AWS ERZr2, ERZr3, ERZr4
Classification: AWS A5.24
Recommended Use: Weld Wire, Bar, Billet

SECTION 2: HAZARD IDENTIFICATION

GHS Classification (29 CFR 1910.1200): Not classified as hazardous

GHS Label Elements:

Signal Word: N/A

Hazard Statements: N/A

Precautionary Statements: N/A

SECTION 3: COMPONENTS/INFORMATION ON INGREDIENTS

	Component %	OSHA/PEL	ACGIH/TLV
Zirconium	95-99	5 mg/m ³	10 mg/m ³
Hafnium	4.5	0.5 mg/m ³	0.5 mg/m ³
Niobium (Columbium)	2-3	n/a	n/a
Tin	1-2	n/a	n/a

SECTION 4: FIRST AID MEASURES

General Measures: Under normal handling and use, exposure to solid forms of this material present few health hazards. Subsequent operations such as grinding, melting or welding may produce potentially hazardous dust or fumes which can be inhaled or come in contact with the skin or eyes.

INHALATION: Remove to fresh air, keep warm and quiet, give oxygen if breathing is difficult. Seek medical attention.

INGESTION: Rinse mouth with water. Do not 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 soap and water. Seek medical attention if symptoms develop or persist.

EYES: Flush eyes with lukewarm water, including under upper and lower eyelids, for at least 15 minutes. Seek medical attention if symptoms develop or persist.

Most Important Symptoms/Effects, Acute and Delayed: May cause irritation. See section 11 for more information.

Indication of Immediate Medical Attention and Special Treatment: No other relevant information available.

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SECTION 5: FIRE FIGHTING MEASURES

Extinguishing Media: Use Class D dry powder extinguishing agent or dry table salt.

Unsuitable Extinguishing Media: Do not use water, carbon dioxide or halocarbon extinguishing agents.

Specific Hazards Arising from the Material: This product does not present fire or explosion hazards as shipped. Fine turnings and dust from processing may be readily ignitable. May emit toxic metal oxide fumes under fire conditions.

Special Protective Equipment and Precautions for Firefighters: Full face, self-contained breathing apparatus and full protective clothing when necessary.

Additional Information: If metal fines ignite, allow the material to burn out. Control small fires by smothering with dry table salt or using a type D extinguisher. Separate burning material from larger mass, and allow it to burn out. Do not spray water on burning zirconium. Carbon dioxide is not effective in extinguishing burning zirconium either. If a fire starts in a mass of wet metal fines, an explosion may follow due to rapidly expanding gases. The explosive characteristic of such material is caused by the steam and hydrogen generated within the burning mass.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment, and Emergency Procedures: Wear appropriate respiratory and protective equipment specified in section 8. Avoid dust formation. Keep finely divided zirconium away from any source of ignition and cleaned up immediately.

Methods and Materials for Containment and Cleaning Up: Sweep or scoop up. Place in properly labeled container for further handling and disposal.

Environmental Precautions: Do not allow to be released to the environment.

SECTION 7: HANDLING AND STORAGE

Precautions for Safe Handling: This material is generally not considered hazardous in its solid form. However, if your process creates fines or dusts precautions must be taken. Machining of zirconium may result in fine turnings or chips. Any material with a dimension less than 0.0625" (1/16") or a cross section less than 0.0078" square (1/16 x 1/8), if present in any quantity, can be ignited and can sustain combustion. Keep away from any source of ignition. Avoid creating or accumulating dusts or fines. See section 8 for information on engineering controls and personal protection equipment.

Conditions for Safe Storage: Store in a cool, dry area. Store away from acids. See section 10 for more information on incompatible materials.

SECTION 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION

Exposure Limits: Zirconium

OSHA/PEL: 5 mg/m³

ACGIH/TLV: 5 mg/m³

Engineering Controls: Ensure adequate ventilation to maintain exposures below occupational limits. Whenever possible the use of local exhaust ventilation or other engineering controls is the preferred method of controlling exposure to airborne dust and fume to meet established occupational exposure

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limits. Use good housekeeping and sanitation practices. Do not allow dusts to accumulate as they may present a serious fire hazard.

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.

Respiratory Protection: If permissible levels are exceeded, use NIOSH approved dust respirator.

Eye Protection: Safety glasses

Skin Protection: Wear impermeable gloves, protective work clothing as necessary.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance:

Form: Solid in various forms

Color: Silver gray metallic

Odor: Odorless

Odor Threshold: Not determined

pH: N/A

Melting Point: 1852±2 °C

Boiling Point: 4377 °C

Flash Point: N/A

Evaporation Rate: N/A

Flammability: No data

Upper Flammable Limit: No data

Lower Flammable Limit: No data

Vapor Pressure: No data

Vapor Density: N/A

Relative Density (Specific Gravity): 6.49 g/cc

Solubility in H₂O: Insoluble

Partition Coefficient (n-octanol/water): Not determined

Autoignition Temperature: No data

Decomposition Temperature: No data

Viscosity: N/A

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SECTION 10: STABILITY AND REACTIVITY

Reactivity: No data

Chemical Stability: Stable under recommended storage conditions.

Possibility of Hazardous Reactions: Zirconium fines will burn when exposed to an ignition source. Dust dispersed in air may be explosive. 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%.

Conditions to Avoid: Avoid creating or accumulating fines or dusts. Avoid all sources of ignition.

Incompatible Materials: Acids, oxidizing agents, fluorine, chlorine, bromine, iodine, halocarbons, carbon tetrachloride, carbon tetrafluoride, freons, nitryl-fluoride.

Hazardous Decomposition Products: Zirconium oxide fume.

SECTION 11: TOXICOLOGY INFORMATION

Likely Routes of Exposure: Inhalation, skin, eyes. Product as shipped does not present an inhalation hazard; however subsequent operations may create dusts or fumes which could be inhaled.

Symptoms of Exposure: May cause irritation if dusts or fumes are inhaled or swallowed. Fines/dusts may irritate skin and eyes.

Acute and Chronic Effects: Zirconium is generally considered to be physiologically inert.

Acute Toxicity: No data

Carcinogenicity: NTP: Not identified as carcinogenic IARC: Not identified as carcinogenic

To the best of our knowledge the chemical, physical and toxicological characteristics of the substance are not fully known.

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity: No data

Persistence and Degradability: No data

Bioaccumulative Potential: No data

Mobility in Soil: No data

Other Adverse Effects: Do not allow material to be released to the environment without proper governmental permits. No further relevant information available.

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SECTION 13: DISPOSAL CONSIDERATIONS

Waste Disposal Method:

Product: Dispose of in accordance with Federal, State and Local regulations.

Packaging: Dispose of in accordance with Federal, State and Local regulations.

SECTION 14: TRANSPORTATION INFORMATION

Shipping Regulations: Not regulated

UN Number: N/A

UN Proper Shipping Name: N/A

Transport Hazard Class: N/A

Packing Group: N/A

Marine Pollutant: No

SECTION 15: REGULATORY INFORMATION

TSCA Listed: All components are listed.

Regulation (EC) No 1272/2008 (CLP): N/A

Canada WHMIS Classification (CPR, SOR/88-66): N/A

HMIS Ratings: Health: 0 Flammability: 1 Physical: 0

NFPA Ratings: Health: 0 Flammability: 1 Reactivity: 0

Chemical Safety Assessment: A chemical safety assessment has not been carried out.

SECTION 16: OTHER INFORMATION

None Available.

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