



Special Effects Equipment & Supplies

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For Chemical Emergency call Infotrac @ 1-800-535-5053

## Material Safety Data Sheet

### Section 1 - Product Information

**Product Name:** Wetted Zirconium Powder

**Chemical Name:** Zirconium Powder

### Section 2 - Hazardous Ingredients

Chemical Name	CAS#	Percentage
Zirconium Powder	7440-67-7	70%

Exposure Limits	Permissible Exposure Limit:	N/A
	Ceiling Limits:	N/A
	Short Term Exposure Limit:	N/A
	Can be absorbed through skin?:	No

### Section 3 - Physical/Chemical Characteristics

Boiling Point	6471 F	Solubility in Water	Insoluble
Vapor Pressure (mm Hg)	0	Specific Gravity (H2O = 1)	N/A
Vapor Density (Air = 1)	N/A	Melting Point	3353 F
Appearance and Odor / Odor threshold	Dark gray powder. Odorless, sulphurous odor may occur.		
Evaporation Rate (Butyl Acetate = 1)		PH	N/A
Freezing Point	N/A		

### Section 4 - Fire and Explosion Data

Lower Explosive/Flammability Limit	40 mg/m <sup>3</sup>	Flash Point	N/A
Upper Explosive/Flammability Limit	N/A	Autoignition Temperature	338 - 482 F
Extinguishing Media	Extinguishing powder on the basis of NaCl (e.g. Totalit M) or pulverized limestone. Never extinguish with a halon or carbon dioxide extinguisher or water.		
Fire Fighting Measures	In case of greater fires: Wear self-contained breathing apparatus. This substance is combustible and self-igniting; Take precautionary measures against static discharges.		
Fire or Explosion Hazards	The main hazard source when manipulating zirconium powder is its very high flammability, even by electric charges. When mixed with at least 25 weight-% water, its flammability is significantly reduced. Slightly humid, half-dry zirconium powder (2-10% water) can ignite and burns then instantaneously (explosion), throwing off sparks. When dry, there is a dust explosion hazard. Burning zirconium decomposes water instantaneously (explosion). The product is combustible.		

### Section 5 - Reactivity Data

<b>Chemical Stability</b>	Stable under proper condtions.
<b>Incompatibility</b>	Oxidizing agents
<b>Conditions to Avoid</b>	At higher temperature risk of selfignition. Keep away from sources ignition. Avoid friction sparks. Avoid formation of dust/air mixtures because of explosion hazard.
<b>Hazardous Decomposition or Byproducts</b>	None.
<b>Hazardous Polymerization</b>	Will not occur.

### Section 6 - Health Hazard Data

<b>Routes of Entry</b>	Eyes.
<b>Health Hazards</b>	Irritating to eyes. The metal is not toxic. May cause sensitization by inhalation and skin contact. No adverse effects known, when properly handled.
<b>Carcinogenicity</b>	N/A
<b>Signs and Symptoms of Exposure</b>	See Health Hazards
<b>Medical conditions generally aggravated by exposure</b>	N/A
<b>Emergency and First Aid Procedures</b>	<b>Inhalation:</b> Move victim to fresh air, loosen restrictive clothing and calm the victim. Always seek medical attention if symptoms delevop that are possbily due to exposure through inhalation of combstion gases.
	<b>Skin Contact:</b> After contact with skin, wash immediately with plenty of water.
	<b>Eye Contact:</b> Immediately flush eyes with plenty of flowing water for 10 to 15 minutes holding eyelids apart.
	<b>Ingestion:</b> If person is clearly conscious, have them drink two glasses of water to dilute ingested material. Immediately get medical attention.
	<b>Information to Physician:</b> Treat symptomatically.

### Section 7 - Precautions for Safe Handling and Use

<b>Spill or Release Data</b>	Soak up with absorbent materials such as sand, siliceus earth, acid- or universal binder. Store in special closed containers and dispose of according to ordinance. If substance has entered a water course or sewer or has contaminated soil or vegetation, advise police and firefighting department.
<b>Waste Disposal Method</b>	Do not empty into drains or the aquatic environment. Dispose of waste according to applicable local, state, and federal regulations. All residues or wastes should be destroyed by burning them at a safe place. Handle contaminated packaging in the same way as the susbstance itself.
<b>Handling and Storage</b>	Keep away from sources of ignition. Take precautionary measures against static discharges. Avoid generation of dust. Keep container tightly closed in a cool, well-ventilated place. Keep container dry. Avoid shock and friction. Tin cans are recommended for storage. Do not freeze.
<b>Other Precautions</b>	Keep out of reach of children.

### Section 8 - Control Measures

<b>Respiratory Protection</b>	Inhalation of dust should be avoided by good ventilation or use of a dust mask although zirconium and titanium are considered to be not harmful. A protective dust mask class P3 is recommended as the toxicology of these nickel-containing alloys is not fully known.
<b>Protective Gloves</b>	Leather gloves according to EN 374.
<b>Eye Protection</b>	Tightly sealed safety glasses according to EN 166 or face shield.
<b>Other Protective Equip.</b>	Wear suitable protective clothing. (Fire retardant work clothing)
<b>Ventilation</b>	In order to minimize respirable dust.
<b>Work/Hygienic Practices</b>	Safety shower and eye wash station should be easily accessible to the work area. Provide adequate ventilation. No smoking. Handle open
	container with care. Use grounding equipment. Do not allow containers
	to stand open. Take all contaminated clothing off immediately. Wash
	hands when done working with material; at breaks, lunch, shift changes etc.

To the best of our knowledge, the information contained above is accurate. However, neither the above named supplier nor any of its subsidiaries assume any liability whatsoever for the accuracy or completeness of the information contained above.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described above, we cannot guarantee that these are the only hazards that exist.

Prepared: October 2006