



LTS Research Laboratories, Inc.  
Safety Data Sheet  
Zirconium

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1. Product and Company Identification

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Trade Name: Zirconium  
Chemical Formula: Zr  
Recommended Use: Scientific research and development

Manufacturer/Supplier: LTS Research Laboratories, Inc.  
Street: 37 Ramland Road  
City: Orangeburg  
State: New York  
Zip Code: 10962  
Country: USA  
Tel #: 855-587-2436 / 855-lts-chem

24-Hour Emergency Contact: 800-424-9300 (US & Canada)  
+1-703-527-3887 (International)

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2. Hazards Identification

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Signal Word: Danger



Hazard Statements: H250: Catches fire spontaneously if exposed to air  
H260: In contact with water releases flammable gases which may ignite spontaneously

Precautionary Statements: P210: Keep away from heat/sparks/open flames/hot surfaces – No smoking.  
P222: Do not allow contact with air.  
P223: Keep away from any possible contact with water, because of violent reaction and possible flash fire.  
P231+P232: Handle under inert gas. Protect from moisture  
P280: Wear protective gloves/protective clothing/eye protection/face protection.  
P335+P334: Brush off loose particles from skin. Immerse in cool water/wrap in wet bandages.  
P370+P378: In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.  
P402+P404: Store in a dry place. Store in a closed container.  
P422: Store contents under inert gas.  
P501: Dispose of contents/container in accordance with local/regional/national/international regulations.

HMIS Health Ratings (0-4):  
Health: 1  
Flammability: 3  
Physical: 2

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### 3. Composition

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Chemical Family:	Metal
Additional Names:	N/A
Zirconium (Zr):	
Percentage:	100 wt%
CAS #:	7440-67-7
EC #:	231-176-9

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### 4. First Aid Procedures

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General Treatment:	Seek medical attention if symptoms persist.
Special Treatment:	None
Important Symptoms:	None
Inhalation:	Remove victim to fresh air. Supply oxygen if breathing is difficult.
Ingestion:	Give one to two glasses of water and induce vomiting. Never induce vomiting or give anything by mouth to an unconscious person.
Skin:	Wash affected area with mild soap and water. Remove any contaminated clothing.
Eyes:	Flush eyes with water, blinking often for several minutes. Remove contact lenses if present and easy to do. Continue rinsing

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### 5. Firefighting Measures

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Flammability:	Flammable as powder
Extinguishing Media:	No special restrictions – use suitable extinguishing agent for surrounding material and type of fire. Do not use water for metal fires – use CO <sub>2</sub> , sand, extinguishing powder.
Spec. Fire Fighting Procedure:	Use full-face, self-contained breathing apparatus with full protective clothing to prevent contact with skin and eyes. See section 10 for decomposition products.

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### 6. Accidental Release Measures

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If Material Is Released/Spilled:	Wear appropriate respiratory and protective equipment specified in special protection information. Isolate spill area and provide ventilation. Vacuum up spill using a high efficiency particulate absolute (HEPA) air filter and place in a closed container for disposal. Take care not to raise dust.
Environmental Precautions:	Isolate runoff to prevent environmental pollution.

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### 7. Handling and Storage

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Handling Conditions:	Handle under inert gas. Wash thoroughly after handling.
Storage Conditions:	Keep away from heat/sparks/open flames/hot surfaces. Store in a cool dry place in a tightly sealed container. Store apart from materials and conditions listed in section 10.
Work/Hygienic Maintenance:	Do not use tobacco or food in work area. Wash thoroughly before eating and smoking. Do not blow dust off clothing or skin with compressed air.
Ventilation:	Provide sufficient ventilation to maintain concentration at or below threshold limit.

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## 8. Exposure Controls and Personal Protection

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Permissible Exposure Limits:	0.15 mg/m <sup>3</sup> as Zr, long-term value
Threshold Limit Value:	5 mg/m <sup>3</sup> as Zr, long-term value 10 mg/m <sup>3</sup> as Zr, short-term value
Special Equipment:	None
Respiratory Protection:	Dust Respirator
Protective Gloves:	Rubber gloves
Eye Protection:	Safety glasses or goggles
Body Protection:	Protective work clothing. Wear close-toed shoes and long sleeves/pants.

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## 9. Physical and Chemical Characteristics

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Color	Grey
Form:	Powder, Granules, Pellets, Sputtering target, Custom parts
Odor:	Odorless
Water Solubility:	Insoluble
Boiling Point:	4377 °C
Melting Point:	1852 °C
Flash Point:	204.4 °C
Autoignition Temperature:	N/A
Density:	6.51 g/cc
Molecular weight:	91.22 g/mol

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## 10. Reactivity

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Stability:	Stable under recommended storage conditions
Reacts With:	Alkali metals, Hydroxides, Metal chromates, Dichromates, Molybdates, Salts, Sulfates, Tungstates, Borax, Carbon, Tetrachloride, Copper oxides, Lead, Lead oxide, Phosphorous, Potassium nitrate, Nitrylfluoride, Potassium chlorate
Incompatible Conditions:	Heat/Flames/Sparks/Ignition sources
Hazardous Decomposition Products:	Oxides of zirconium

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## 11. Toxicological Information

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Potential Health Effects:	
Eyes:	May cause irritation
Skin:	May cause irritation
Ingestion:	May cause irritation
Inhalation:	May cause irritation
Chronic:	N/A
Signs & Symptoms:	N/A
Aggravated Medical Conditions:	N/A
Median Lethal Dose:	5000 mg/kg for rat by mouth
Carcinogen:	N/A

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## 12. Ecological Information

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Aquatic Toxicity:	Low
Persistent Bioaccumulation Toxicity:	No
Very Persistent, Very Bioaccumulative:	No
Notes:	N/A

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### 13. Disposal Considerations

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Dispose of in accordance with local, state, national, and international regulations.

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### 14. Transportation Data

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Hazardous: Hazardous as powder only



Hazard Class: 4.2 Spontaneously combustible materials  
Packing Group: II  
UN Number: UN2008  
Proper Shipping Name: Zirconium powder, dry

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### 15. Regulatory Information

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Sec 302 Extremely Hazardous: No  
Sec 304 Reportable Quantities: N/A  
Sec 313 Toxic Chemicals: No

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### 16. Other Information

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This safety data sheet should be used in conjunction with technical sheets. It does not replace them. The information given is based on our knowledge of this product, at the time of publication. It is given in good faith. The attention of the user is drawn to the possible risks incurred by using the product for any other purpose other than that for which it was intended. This does not in any way excuse the user from knowing and applying all the regulations governing his activity. It is the sole responsibility of the user to take all precautions required in handling the product. The aim of the mandatory regulations mentioned is to help the user to fulfill his obligations regarding the use of hazardous products.

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