



XI'AN FUNCTION MATERIAL GROUP CO., LTD  
Material Safety Data Sheet  
Zirconium Aluminum Alloy

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1. Product and Company Identification

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Trade Name: Zirconium Aluminum Alloy  
Chemical Formula: ZrAl  
Recommended Use: Scientific research and development

Manufacturer/Supplier: XI'AN FUNCTION MATERIAL GROUP CO., LTD  
Street: No. 69, Gazelle Valley, High-Tech Zone  
City: XI'AN  
State: Shannxi  
Zip Code: 710077  
Country: China  
Tel #: +86-29-88993870/+86-13519132051

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2. Hazards Identification

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Signal Word: Danger



Hazard Statements: H228: Flammable solid.  
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.  
P231+P232: Handle under inert gas. Protect from moisture.  
P240: Ground/bond container and receiving equipment.  
P241: Use explosion-proof electrical/ventilating/lighting equipment  
P280: Wear protective gloves/protective clothing/eye protection/face protection.  
P370+P378: In case of fire: Use special powder for metal fires for extinction.  
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 alloy  
Additional Names: Aluminum Zirconium

Aluminum (Al):  
Percentage: 0-100 wt%  
CAS #: 7429-90-5  
EC #: 231-072-3  
Zirconium (Zr):  
Percentage: 0-100 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. Seek immediate medical attention.  
Ingestion: Give one to two glasses of water. Never induce vomiting or give anything by mouth to an unconscious person. Seek immediate medical attention.  
Skin: Wash affected area with mild soap and water. Remove any contaminated clothing. Seek immediate medical attention.  
Eyes: Flush eyes with water, blinking often for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. Seek immediate medical attention.

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### 5. Firefighting Measures

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Flammability: Flammable, as powder  
Extinguishing Media: 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: Wash thoroughly after handling.  
Storage Conditions: 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:	15 mg/m <sup>3</sup> as Al, long-term value 5 mg/m <sup>3</sup> as Zr, long-term value
Threshold Limit Value:	1 mg/m <sup>3</sup> as Al, long-term value 10 mg/m <sup>3</sup> as Zr, long-term value
Special Equipment:	None
Respiratory Protection:	Use a recommended dust respirator or mask. Only use equipment tested and approved under appropriate government standards
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	Dark Grey
Form:	Powder, Granules, Pellets, Sputtering target, Custom parts
Odor:	Odorless
Water Solubility:	Insoluble
Boiling Point:	N/A
Melting Point:	N/A
Flash Point:	N/A
Autoignition Temperature:	N/A
Density:	N/A
Molecular weight:	N/A

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## 10. Reactivity

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Stability:	Stable under recommended storage conditions
Reacts With:	Oxidizing agents, Air, Acids, Bases, halocarbons and water
Incompatible Conditions:	Air, Moisture
Hazardous Decomposition Products:	Metal oxide fume

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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:	N/A
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:	Do not allow material to be released to environment without proper government permits. Avoid transfer into environment.

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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: 4.3 Dangerous when wet materials  
Secondary Hazard Class: 4.1 Flammable Solids  
Packing Group: PG II  
UN Number: UN 3132  
Proper Shipping Name: Water-reactive solid, flammable, n.o.s (Zirconium Aluminum Alloy)

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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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