



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

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1. Product and Company Identification

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Trade Name: Zirconium Vanadium Titanium  
Chemical Formula: ZrVTi  
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 Warning



Hazard Statements: H315 Causes skin irritation  
H319 Causes serious eye irritation  
H228: Flammable solid  
H251 Self-heating: may catch fire

Precautionary Statements: P261 Avoid breathing dust/fume/vapor  
P305+P351 If in eyes: Rinse cautiously with water for several minutes.  
P280: Wear protective gloves/protective clothing/eye protection/face protection  
P235+P410 Keep cool; protect from sunlight  
P420: Store away from other materials  
P407: Maintain air gap between stacks/pallets  
P210: Keep away from heat/sparks/open flames/hot surfaces – No smoking  
P240: Ground/bond container and receiving equipment  
P241: Use explosion-proof electrical/ventilating/light/.../equipment  
P370+P378: In case of fire: Use special powder for metal fires for extinction

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

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### 3. Composition

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Chemical Family:	Alloy
Additional Names:	N/A
Zirconium (Zr):	
Percentage:	0-100 wt. %
CAS #:	7440-67-7
EC #:	231-176-9
Vanadium (V):	
Percentage:	0-100 wt%
CAS #:	7440-62-2
EC #:	231-171-1
Titanium (Ti):	
Percentage:	0-100 wt. %
CAS #:	7440-32-6
EC #:	231-142-3

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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. Seek medical advice
Eyes:	Flush eyes with water, blinking often for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. Consult doctor

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### 5. Firefighting Measures

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Flammability:	Flammable solid
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:	Handle under dry protective gas. Wash thoroughly after handling.
Storage Conditions:	Store in a cool dry place in a tightly sealed container. Store under dry inert gas. 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:	5 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:	Use a respirator with type N95 (USA) or PE (EN 143) cartridges as a backup to engineering controls. Risk assessment should be performed to determine if purifying respirators are appropriate. Only use equipment tested and approved under appropriate government standards.
Protective Gloves:	Nitrile rubber, NBR 0.11mm thick.
Penetration time of glove material:	480 minutes
Eye Protection:	Full face 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	N/A
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
Incompatible Conditions:	Water, Air, Halogens, Halocarbons, Mineral acids, Strong acids, Strong oxidizing agents, Hydrogen Fluoride, Phosphorus, Oxygen, Heat, light
Hazardous Decomposition Products:	Metal oxide fume

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## 11. Toxicological Information

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### Potential Health Effects:

Eyes:	May cause serious irritation
Skin:	Causes skin 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 the environment without proper governmental permits.  
Do not allow product to reach any water sources.  
Avoid transfer into the 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: 4.1 Flammable solids

Secondary Class: 4.2 Substance liable to spontaneous combustion

Packing Group: II

UN Number: UN3089

Proper Shipping Name: Metal powder, flammable, n.o.s (Zirconium Vanadium Titanium 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: Yes (Vanadium)

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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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