



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

Zirconium Nitride

1. Product and Company Identification

Trade Name: Zirconium nitride
Chemical Formula: ZrN
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

2. Hazards Identification

Signal Word:

Danger



Hazard Statements:

H228 Flammable solid
H315 Causes skin irritation
H319 Causes serious eye irritation
H445 May cause eye irritation

Precautionary Statements:

P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking
P261 Avoid breathing the dust/fume/gas/mist/vapor/spray
P280 Wear protective gloves/protective clothing/eye protection /face protection
P305+ P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P405 Store locked up
P501 Dispose of contents/ container in accordance with local/regional/national/international regulations

HMIS Health Ratings (0-4):

Health: 1
Flammability: 2 (powder)
Physical: 1

3. Composition

| | |
|-------------------------|------------|
| Chemical Family: | Ceramic |
| Additional Names: | N/A |
| Zirconium nitride (ZrN) | |
| Percentage: | 0-100 wt% |
| CAS #: | 25658-42-8 |
| EC #: | 247-166-2 |

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 |

5. Firefighting Measures

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|--------------------------------|---|
| Flammability: | Non-flammable, except as powder |
| Extinguishing Media: | No special restrictions – use suitable extinguishing agent for surrounding material and type of fire. Use CO ₂ , sand, extinguishing powder, or water spray. |
| 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. |

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. |

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. |

8. Exposure Controls and Personal Protection

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| Permissible Exposure Limits: | 5 mg/m ³ as Zr, long-term value |
| Threshold Limit Value: | 5 mg/m ³ as Zr, long-term value 10 mg/m ³ 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. |

9. Physical and Chemical Characteristics

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|---------------------------|--|
| Color | Yellow to brown |
| Form: | Powder, Granules, Pellets, Sputtering target, Custom parts |
| Odor: | Odorless |
| Water Solubility: | Insoluble |
| Boiling Point: | N/A |
| Melting Point: | 2980 °C |
| Flash Point: | N/A |
| Autoignition Temperature: | N/A |
| Density: | 7.09 g/cc |
| Molecular weight: | 105.23 g/mol |

10. Reactivity

| | |
|-----------------------------------|---|
| Stability: | Stable under recommended storage conditions |
| Reacts With: | Oxidizing agents |
| Incompatible Conditions: | None |
| Hazardous Decomposition Products: | Nitrogen Fumes (NO _x), Metal oxide fume |

11. Toxicological Information

| | |
|--------------------------------|---------------------------|
| Potential Health Effects: | |
| Eyes: | Causes serious eye damage |
| 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: | Not known |
| Carcinogen: | N/A |

12. Ecological Information

| | |
|--|---|
| Aquatic Toxicity: | N/A |
| Persistent Bioaccumulation Toxicity: | N/A |
| Very Persistent, Very Bioaccumulative: | N/A |
| Notes: | Do not allow material to be released to the environment without proper governmental permits. Do not allow undiluted product of large quantities to reach ground water, water course or sewage system. May cause long lasting harmful effects to aquatic life. |

13. Disposal Considerations

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

14. Transportation Data

Hazardous: Hazardous as powder only.



Hazard Class: 4.1 Flammable solids
Packing Group: III
UN Number: UN3178
Proper Shipping Name: Flammable solid, inorganic, n.o.s. (Zirconium nitride)

15. Regulatory Information

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

16. Other Information

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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