



XI'AN FUNCTION MATERIAL GROUP CO., LTD  
Material Safety Data Sheet  
Indium Oxide/Zinc Oxide

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### 1. Product and Company Identification

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Trade Name: Hafnium oxide/Indium oxide/Zinc oxide  
Chemical Formula:  $\text{In}_2\text{O}_3/\text{ZnO}$

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

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### 2. Hazards Identification

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Signal Word: Warning

Hazard Statements: H302: Harmful if swallowed

Precautionary Statements: P264: Wash thoroughly after handling  
P270: Do not eat, drink or smoke when using this product  
P301+P312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell  
P330: Rinse mouth  
P501: Dispose of contents/container in accordance with local/regional/national/international regulations

HMIS Health Ratings (0-4):

Health:	1
Flammability:	0
Physical:	1

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### 3. Composition

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Chemical Family: Ceramic  
Additional Names: None

Indium oxide ( $\text{In}_2\text{O}_3$ ):  
Percentage: 0-100 wt%  
CAS #: 1312-43-2  
EC #: 215-193-9

Zinc oxide ( $\text{ZnO}$ ):  
Percentage: 0-100 wt%  
CAS #: 1314-13-2  
EC #: 215-222-5

Tin oxide ( $\text{SnO}_2$ ):  
Percentage: 0-100 wt%  
CAS #: 21651-19-4  
EC #: 244-499-5

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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:	Seek Medical Attention.
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:	Non-flammable
Extinguishing Media:	No special restrictions – use suitable extinguishing agent for surrounding material and type of fire.
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:	0.1 mg/m <sup>3</sup> as In, long-term value
Threshold Limit Value:	0.1 mg/m <sup>3</sup> as In, long-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.
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	Yellow
Form:	Sputtering target
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:	None
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:

775 mg/kg for mouse by mouth

### Carcinogen:

EPA-D: Not classifiable as to human carcinogenicity: inadequate human and animal evidence of carcinogenicity or no data are available.  
EPA-I: Data are inadequate for an assessment of human carcinogenic potential.  
EPA-II: Inadequate information to assess carcinogenic potential.

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## 12. Ecological Information

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### Aquatic Toxicity:

High

### Persistent Bioaccumulation Toxicity:

No

### Very Persistent, Very Bioaccumulative:

No

### Notes:

Very toxic for aquatic organism.  
May cause long lasting harmful effect on aquatic life.  
Do not allow material to be released to the environment without proper governmental permits.  
Do not allow product to reach any water sources.  
Danger to drinking water if even extremely small quantities leak into the ground.  
Also poisonous for fish and plankton in water bodies.  
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:	Not hazardous for transportation.
Hazard Class:	N/A
Packing Group:	N/A
UN Number:	N/A
Proper Shipping Name:	N/A

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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

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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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