



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

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1. Product and Company Identification

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Trade Name: Magnesium Bismuth Alloy  
Chemical Formula:  $Mg_3Bi_2$

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: 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.  
P223: Do not allow contact with water.  
P231+P232: Handle under inert gas. Protect from moisture.  
P235+P410: Keep cool. Protect from sunlight.  
P240: Ground/bond container and receiving equipment.  
P241: Use explosion-proof electrical/ ventilating/ lighting/equipment.  
P280: Wear protective gloves/ 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 to extinguish.  
P402+P404: Store in a dry place. Store in a closed container.  
P407: Maintain air gap between stacks/ pallets.  
P420: Store away from other materials.  
P501: Dispose of contents/ container to an approved waste disposal plant.

HMIS Health Ratings (0-4):

Health: 1  
Flammability: 4  
Physical: 3

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### 3. Composition

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Chemical Family: Metal alloy  
Additional Names: Bismuth Magnesium Alloy, Magnesium bismuthide

Magnesium Bismuth Alloy (Mg<sub>3</sub>Bi<sub>2</sub>):  
Percentage: 100 wt%  
CAS #: 12048-46-3  
EC #: 234-983-4

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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. Keep patient warm. Seek immediate medical attention.  
Ingestion: Seek immediate medical attention.  
Skin: Immediately 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: Highly flammable  
Extinguishing Media: Do not use water for fires – use special powder for metals fires.  
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. Keep unprotected persons away. 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. Keep away from ignition sources.  
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 away from air, oxidizing agents, halogens, acids, water/moisture. This product is air and moisture sensitive. 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:	N/A
Threshold Limit Value:	N/A
Special Equipment:	Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.
Respiratory Protection:	Dust Respirator
Protective Gloves:	Nitrile rubber gloves with minimum thickness of 0.11 mm
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	N/A
Form:	Powder, Granules, Pellets, Sputtering target, Custom parts
Odor:	Odorless
Water Solubility:	Contact with water liberates extremely flammable gases.
Boiling Point:	N/A
Melting Point:	N/A
Flash Point:	N/A
Autoignition Temperature:	N/A
Density:	N/A
Molecular weight:	490.876 g/mol

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## 10. Reactivity

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Stability:	Stable under recommended storage conditions. Contact with water liberates extremely flammable gases. Catches fire spontaneously if exposed to air.
Reacts With:	Oxidizing agents, acids, halogens, nitrogen, acid chlorides,
Incompatible Conditions:	Heat, flames and sparks, air, water/moisture
Hazardous Decomposition Products:	Metal oxide fume, bismuth oxide, magnesium oxide

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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:	Burning sensation, cough, wheezing, laryngitis, shortness of breath, headache, nausea, vomiting, chills, fever, fatigue, muscle pain, joint pain, rash, anorexia.
Aggravated Medical Conditions:	Liver - Irregularities - Based on Human Evidence
Median Lethal Dose:	2,000 mg/kg for rat by mouth as Bi
Carcinogen:	IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC. NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

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## 12. Ecological Information

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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 government permits. Do not allow undiluted product or large quantities to reach ground water, water course or sewage system. Avoid transfer not 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 for transportation
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Hazard Class:	4.2 Spontaneously combustible solid
Secondary Class:	4.3 Substances which, in contact with water, emit flammable gases
Packing Group:	II
UN Number:	UN1418
Proper Shipping Name:	Metal powders, flammable, n.o.s. (Magnesium Bismuth 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.

Document Last Revised: 07/23/2017