



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

---

1. Product and Company Identification

---

Trade Name:	Bismuth antimonide
Chemical Formula:	BiSb, Bi <sub>2</sub> Sb <sub>2</sub>
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

---

2. Hazards Identification

---

Signal Word: Warning



Hazard Statements: H302+H332 Harmful if swallowed or inhaled

Precautionary Statements: P261 Avoid breathing dust/fume/vapor  
P304+P340 If inhaled, Remove person to fresh air  
P301+P312 If swallowed, Call a doctor or poison center if you feel unwell

HMIS Health Ratings (0-4):

Health:	2
Flammability:	0
Physical:	1

---

3. Composition

---

Chemical Family:	Ceramic
Additional Names:	Bismuth antimony
Bismuth antimonide (BiSb):	
Percentage:	100 wt%
CAS #:	12323-19-2 as BiSb 12323-25-0 as Bi <sub>2</sub> Sb <sub>2</sub>
EC #:	N/A

---

#### 4. First Aid Procedures

---

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

---

Flammability:	Non-flammable, except as powder
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.

---

#### 6. Accidental Release Measures

---

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

---

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

---

Permissible Exposure Limits:	0.5 mg/m <sup>3</sup> as Sb
Threshold Limit Value:	0.5 mg/m <sup>3</sup> as Sb
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

---

Color	Metallic grey
Form:	Powder, Granules, Pellets, Sputtering target, Custom parts
Odor:	Odorless
Water Solubility:	Insoluble
Boiling Point:	N/A
Melting Point:	~350 °C
Flash Point:	N/A
Autoignition Temperature:	N/A
Density:	~8.4 g/cc
Molecular weight:	661.481 g/mol

---

## 10. Reactivity

---

Stability:	Stable under recommended storage conditions
Reacts With:	Oxidizing agents
Incompatible Conditions:	None
Hazardous Decomposition Products:	Metal oxide fume

---

## 11. Toxicological Information

---

### Potential Health Effects:

Eyes:	May cause irritation
Skin:	May cause irritation
Ingestion:	Harmful
Inhalation:	Harmful
Chronic:	Antimony compounds may cause metallic taste, gastrointestinal disturbances, vomiting, diarrhea, dizziness and systemic poisoning. Chronic exposure may cause liver and kidney damage. Dermatitis and eczematous skin eruptions may result from skin contact. Bismuth compounds are often poorly absorbed. However exposure may cause loss of appetite, headache, skin rash, exodermatitis, kidney injury and jaundice. Repeated or prolonged exposure may cause a bismuth line or black spots on the gums, foul breath and salivation. Exposure to bismuth may cause injury to the mouth, esophagus and stomach. Symptoms may include loss of appetite, headache, skin rash, kidney damage and jaundice.

Signs & Symptoms: N/A

Aggravated Medical Conditions: N/A

Median Lethal Dose: N/A

Carcinogen: N/A

---

## 12. Ecological Information

---

Aquatic Toxicity:	Medium
Persistent Bioaccumulation Toxicity:	No
Very Persistent, Very Bioaccumulative:	No
Notes:	N/A

---

## 13. Disposal Considerations

---

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

---

#### 14. Transportation Data

---

Hazardous: Hazardous for transportation as pieces and powder.



Hazard Class: 6.1 Toxic substances  
Packing Group: III  
UN Number: UN1549  
Proper Shipping Name: Antimony compounds, inorganic, solid, n.o.s. (Bismuth antimonide)

---

#### 15. Regulatory Information

---

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

---

#### 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.

Document Last Revised: 05/29/2016