

SAFETY DATA SHEET

Section 1: Product and Company Identification

Product Name: Bismuth Telluride (Bi_2Te_3)

Product ID: BT

Manufacturer/Supplier:
BihurCrystal S.L
Pº Mikeletegi 83, 3º local 7
20009 Donostia, Spain
+34 943041816

Recommended use: Scientific research & development

Section 2: Hazard(s) Identification

Signal Word: Danger



Hazard statements:

H302+H312: Harmful if swallowed or in contact with skin
H331: Toxic if inhaled
H319: Causes serious eye irritation
H335: May cause respiratory irritation

Precautionary statements:

P261 Avoid breathing dust/fume/vapor
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

P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P405: Store locked up
P501: Dispose of contents/container in accordance with local/regional/national/international regulations

HMIS Ratings: Health: 2 Flammability: 0 Reactivity: 1

Section 3: Composition/Information on Ingredients

Chemical Name: Bismuth (III) selenide

Molecular Formula: Bi_2Te_3

Content: 100%

CAS Number: 1304-82-1

EINECS: 215-135-2

Section 4: First-Aid Measures

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. Seek immediate medical attention.

Ingestion: Never induce vomiting or give anything by mouth to an unconscious person. Seek immediate medical attention.

Skin: Wash skin thoroughly with mild soap and water. Rinse thoroughly. 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 advice.

Section 5: Fire-Fighting Measures

Flammability: Flammable

Extinguishing Media: Do not use water– use CO₂, 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.

Section 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.

Section 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.

Section 8: Exposure Controls/Personal Protection

Permissible Exposure Limits:

15 mg/m³ as Bi₂Te₃ (undoped), long-term value, total dust

5 mg/m³ as Bi₂Te₃ (undoped), long-term value, respirable fraction

Threshold Limit Value: 10 mg/m³ as Bi₂Te₃ (undoped), long-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.

Section 9: Physical and Chemical Properties

Color: Gray, metallic luster

Form: Pieces

Odor: Odorless

Water solubility: Insoluble

Boiling Point: N/A

Melting Point: 573 °C

Flash Point: N/A

Autoignition Temperature: N/A

Density: 7.64 g/cc

Molecular weight: 800.76 g/mol

Section 10: Stability and Reactivity

Stability: Stable under recommended storage conditions

Reacts With: Oxidizing agents

Incompatible Conditions: None

Hazardous Decomposition Products: Metal oxide fume

Section 11: Toxicological Information

Potential Health Effects:

Eyes: Causes serious damage

Skin: Harmful

Ingestion: Toxic

Inhalation: Toxic

Bismuth and bismuth compounds are often poorly absorbed. Should absorption occur, 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

Section 12: Ecological Information

Aquatic Toxicity: Low

Toxicity: No

Very Persistent, Very Bioaccumulative: No

Notes: N/A

Section 13: Disposal Considerations

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

Section 14: Transportation Data

Hazardous: Hazardous for transportation.

Hazard Class: 6.1 Toxic substances

Packing Group: III

UN Number: UN3284

Proper Shipping Name: Tellurium compound, n.o.s. (Bismuth(III) telluride)

Section 15: Regulatory Information

Sec 302 Extremely Hazardous: No

Sec 304 Reportable Quantities: N/A

Sec 313 Toxic Chemicals: No

Section 16: Other Information

The above information is believed to be correct, but does not purport to be all inclusive and shall be used only as a guide. BihurCrystal shall not be held liable for any damage resulting from handling or from contact with the above product.