

MATERIAL SAFETY DATA SHEET

I. PRODUCT IDENTIFICATION

Manufacturer/Supplier:

ESPI Metals

1050 Benson Way, Ashland, OR 97520

Toll Free (800) 638-2581 * Fax (541) 488-8313

E-Mail: sales@espimetals.com

Product Name: Bismuth

Formula: Bi

CAS Number: 7440-69-9

II. HAZARDOUS INGREDIENTS

Hazardous Components: Bismuth

Percent (%): 0-100

OSHA/PEL: N/E

ACGIH/TLV: N/E

III. PHYSICAL DATA

Boiling Point: 1420 °C

Melting Point: 271.3 °C

Specific Gravity: 9.80 g/cc

Vapor Pressure: 1 mm at 1020 °C

Solubility in H₂O: Insoluble

Appearance and Odor: Gray to black powder, bright metallic solid, no odor.

IV. FIRE AND EXPLOSION HAZARDS DATA

Flash Point: N/E or N/A

Flammability: Powder is highly flammable

Explosive Limits: **Lower:** N/E **Upper:** N/E

Extinguishing Media: POWDER: Use class D extinguisher or special powder for metal fires. SOLID: Use

suitable extinguishing media for surrounding material and type of fire.

Special Firefighting Procedures: Firefighters must wear full face, self-contained breathing apparatus and full protective clothing to prevent contact with skin and eyes. Fumes from fire are hazardous. Isolate runoff to prevent environmental pollution.

Unusual Fire and Explosion Hazards: Flammable when exposed to flame. May react with acid or acid fumes to emit toxic fumes.

V. HEALTH HAZARD INFORMATION

Effects of Exposure:

To the best of our knowledge the chemical, physical and toxicological properties of bismuth have not been thoroughly investigated and recorded.

Bismuth compounds are often poorly absorbed. However exposure may cause symptoms such as loss of appetite, headache, skin rash, 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.

Acute Effects:

Inhalation: May be a nuisance dust causing respiratory irritation. May cause foul breath, metallic taste and gingivitis.

Ingestion: May cause malaise, albuminuria, diarrhea, skin reactions, stomatitis, headache, fever, rheumatic pain and a black line may form on gums in the mouth.

Skin: May cause irritation

Eye: May cause irritation

Chronic Effects:

Inhalation: May affect the function of the liver and the kidneys.

Ingestion: May affect the function of the liver and kidneys. May cause anemia, black line may form on gums and ulcerative stomatitis.

Skin: May cause dermatitis.

Eye: None recorded.

Target Organs: May affect the kidneys and liver.

Medical Conditions Generally Aggravated by Exposure: Pre-existing skin and respiratory disorders.

Carcinogenicity: **NTP:** No **IARC:** No **OSHA:** No

EMERGENCY AND FIRST AID PROCEDURES:

INHALATION: Remove to fresh air, keep warm and quiet, give oxygen if breathing is difficult and seek medical attention.

INGESTION: Give 1-2 glasses of milk or water and induce vomiting; seek medical attention. Never induce vomiting or give anything by mouth to an unconscious person.

SKIN: Brush material off skin and wash area with soap and water. Seek medical attention if symptoms persist.

EYE: Flush eyes with lukewarm water for at least 15 minute. Seek medical attention if symptoms persist.

VI. REACTIVITY DATA

Stability: Stable

Conditions to avoid: Heat, flame, incompatible materials.

Incompatibilities: Oxidizing agents, acids, halogens, interhalogens.

Hazardous Decomposition Products: Bismuth and bismuth oxide fumes.

Hazardous Polymerization: Will not occur

VII. SPILL OR LEAK PROCEDURES

Steps to be Taken in Case Material is Released or Spilled: Wear appropriate respiratory and protective equipment specified in section VIII. Isolate spill, insure proper ventilation and extinguish sources of ignition. Vacuum up spill using a high efficiency particulate absolute (HEPA) air filter and place in a container for proper disposal. Take care not to raise dust. Use non-sparking tools.

Waste Disposal Method: Dispose of in accordance with applicable Federal, State and Local regulations.

VIII. SPECIAL PROTECTION INFORMATION

Respiratory Protection: NIOSH-approved respirator.

Ventilation: Use local exhaust to maintain concentration at low exposure levels. Handle powders in a controlled, enclosed environment. General exhaust is not recommended.

Protective Gloves: Rubber gloves

Eye Protection: Safety Glasses

Other Protective Equipment: Protective gear suitable to prevent contamination.

IX. SPECIAL PRECAUTIONS

Precautions to Be Taken in Handling and Storage: Store in tightly closed containers in a cool, dry place. Store away from incompatible materials. Wash hands and face thoroughly after handling and before meals.

Work Practices: Implement engineering and work practice controls to reduce and maintain concentration of exposure at low levels. Use good housekeeping and sanitation practices. Do not use tobacco or food in work area. Wash thoroughly before eating or smoking. Do not blow dust off clothing or skin with compressed air. Maintain eyewash capable of sustained flushing, safety drench shower and facilities for washing.

TSCA Listed: Yes

DOT Regulations:

Solid Forms:

Hazard Class: None

Powder:

Hazard Class: 4.1

Identification Number: UN3089

Packing Group: II

Proper Shipping Name: Metal powder, flammable, n.o.s. (bismuth)

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

Issued by: S. Dierks

Revised/Verified: August 2011