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15117 Washington Highway  
P. O. Box 1055 Ashland VA 23005

Phone: (804) 227-3381  
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CHEMTREC: (800) 424-9300  
Poision Center: (800) 562-8236

## Safety Data Sheet

### Section 1: Product and Company Information

Product Name: Bismuth

Company: Fine Metals Corporation  
15117 Washington Hwy  
Ashland, VA 23005

For more information call: 1-804-227-3381  
(Monday - Friday 9-4:30)

**In case of emergency: Transportation (Chemtrec) 1-800-424-9300**  
**Poison Center: 1-800-562-8236**  
(24 hours/day, 7 days/week)

### Section 2: HAZARD IDENTIFICATION

This material is not considered hazardous and is not classified under GHS

#### Emergency Overview

Emergency Overview: Negligible hazard in bulk form.

Hazard Statements: None.

#### Precautionary Statements:

Prevention: None.

Response: None.

#### Appearance/Form:

Form: Solid

Color: Grey metal

Odor: None

Hazard Summary: Toxic bismuth fumes may be released during a fire.

#### Acute Health Effects

Skin: May cause irritation.

Eyes: May cause irritation.

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

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

**Chronic Exposure:** Repeated or prolonged ingestion may cause a "bismuth line", black spots on the gums, foul breath, and salivation. Chronic exposure may affect kidneys and liver.

**Aggravated Medical Conditions:** Pre-existing skin and respiratory disorders may be aggravated.

**Carcinogenicity:** Not considered a carcinogen

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## Section 3: Composition/Information on Ingredients

Chemical Name	CAS-No.	Reach #	EC #	Concentration
Bismuth	7440-69-9	Not available	Not available	>99 wt%

## Section 4: FIRST AID MEASURES

- Eye Contact:** Immediately flush with plenty of water for at least 15 minutes. Get medical attention.
- Skin Contact:** Immediately wash with plenty of soap and water for at least 15 minutes.
- Inhalation:** If a person breathes in large amounts, move the exposed person to fresh air. Get medical attention.
- Ingestion:** Never induce vomiting or give anything by mouth to an unconscious person. Seek medical attention.

## Section 5: FIRE FIGHTING MEASURES

**Suitable extinguishing Media:** Solid-Use extinguishing media appropriate for surrounding fire. Powder- Use class D extinguisher or special powder for metal fires. Do not use water on fire where molten metal is present.

**Unsuitable extinguishing media:** Do not use water

**Specific hazards during firefighting:** Toxic bismuth fumes may be released during a fire. Readily flammable in powder form. Fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.

**Special protective equipment for firefighters:** 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.

## Section 6: ACCIDENTAL RELEASE MEASURES

**Personal Precautions:** Wear suitable protective clothing.

**Environmental Precautions:** This material is a water pollutant and should be prevented from contaminating soil or from entering sewage and drainage systems and bodies of water. Bismuth's environmental impacts are not very well known. It is considered that its environmental impact is small, due in part to the low solubility of its compounds. Limited information however means that a close eye should be kept on its impact.

**Methods for Cleaning Up:** 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.

## Section 7: HANDLING AND STORAGE

**Handling:** 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 with compressed air. Keep away from heat and flame.

**Storage:** Store in tightly closed containers. Store in cool, dry, well-ventilated area away from heat, sparks or flame. Protect from physical damage. Store away from incompatible materials.

## Section 8: EXPOSURE CONTROL/PERSONAL PROTECTION

**Engineering Controls:** Use process enclosures, local exhaust ventilation or other means to maintain employee exposure as far below limits as possible

### Component Exposure Limits

Component	Location	Value
Bismuth	Not established	

**Engineering Controls:** Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.

**Respiratory Protection:** Not normally needed. If ventilation is inadequate and this material is handled at elevated temperatures or dust/fumes/mists are generated a NIOSH/MSHA approved air purifying respirator with a manufacturers approved cartridge or canister may be permissible under certain circumstances.

**Eye/Face:** Wear safety glasses or goggles as appropriate to the task performed.

**Skin Protection:** Wear protective gloves/protective clothing/eye protection/face protection. Wash contaminated clothing before reuse.

**Work Hygienic Practices:** Practice good chemical hygiene during and after use.

**Comments:** There are no established workplace exposure limits for components of this product.

## Section 9: PHYSICAL AND CHEMICAL PROPERTIES

**Physical State:** Solid

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**Odor:** None

**Color:** Grey/silver

**Melting Point:** 271.3° C

**Boiling Point:** 1560° C

**Vapor Pressure:** 1 at 1021° C

**Vapor Density (air = 1):** N/A

**Evaporation Rate:** N/A

**Solubility In Water:** Insoluble

**Specific Gravity (water = 1):** 9.8

**Atomic Weight:** 208.9

**% Volatility By Volume:** No information available.

**Density:** 9.8

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## Section 10: STABILITY AND REACTIVITY

**Stability:** Stable under ordinary conditions of use and storage

**Incompatible Materials:** Strong acids, strong oxidizing agents, chlorine, ammonium nitrate, nitrosyl fluoride, iodine pentafluoride, Aluminum, bromine trifluoride, chloric acid, nitric acid, perchloric acid, and bismuth hydroxide plus aluminum hydroxide.

**Hazardous Decomposition Products:** Toxic metal fumes

**Possibility of Hazardous Reactions:** No information available.

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## Section 11: TOXICOLOGICAL INFORMATION

**Acute Toxicity:** LD50/LC50: Oral, mouse: LD50= 10 gm/kg. Bismuth and its salts can cause kidney damage, although the degree of such damage is usually mild. Large doses can be fatal. Acute effects: Inhalation: POISON. May be a nuisance dust causing respiratory irritation. May cause foul breath, metallic taste and gingivitis. Ingestion: POISON. May cause nausea, loss of appetite and weight, malaise, albuminuria, diarrhea, skin reactions, stomatitis, headache, fever, sleeplessness, depression, rheumatic pain and a black line may form on gums in the mouth due to deposition of bismuth sulphide. Skin: May cause irritation. Eyes: May cause irritation.

**Chronic Toxicity:** Inhalation: May affect the function of the liver and the kidneys. Scientific literature concurs that bismuth and most of its compounds are less toxic compared to other heavy metals (lead, antimony, etc.) and that it is not bioaccumulative. They have low solubilities in the blood, are easily removed with urine, and showed no carcinogenic, mutagenic or teratogenic effects in long-term tests on animals (up to 2 years). Its biological half-life for whole-body retention is 5 days but it can remain in the kidney for years in patients treated with bismuth compounds. Bismuth poisoning exists and mostly affects the kidney, liver, and bladder. Skin and respiratory irritation can also follow exposure to respective organs. As with lead, overexposure to bismuth can result in the formation of a black deposit on the gingiva, known as a bismuth line

**Reproductive Toxicity:** No known effect.

**Mutagenicity:** No known effect.

**Carcinogenicity:** Not listed as a carcinogen by NTP, IARC, OSHA, NIOSH.

**Other:** None

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## Section 12: ECOLOGICAL INFORMATION

**Ecotoxicity:** Bismuth's environmental impacts are not very well known. It is considered that its environmental impact is small, due in part to the low solubility of its compounds. Limited information however means that a close eye should be kept on its impact. Clean Water Act: Not listed as hazardous substances under the CWA. Not listed as Priority Pollutants under the Cwa. Not listed as Toxic pollutants under CWA. Clean Air Act: Does not contain any hazardous air pollutants, Class 1 ozone depleters or Class 2 ozone depleters.

**Persistence/Degradability:** Data not available.

**Bioaccumulation/Accumulation:** The biological half-life for whole-body retention is 5 days but it can remain in the kidney for years in patients treated with bismuth compounds.

**Mobility in Environment:** Data not available.

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## Section 13: DISPOSAL CONSIDERATIONS

**Waste Classification:** Recycling is disposal method of choice.

All disposal activities must comply with federal, state, provincial and local regulations.

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## Section 14: TRANSPORT INFORMATION

**US DOT (ground):** Not regulated

**ICAO/IATA (air):** Not regulated

**IMO/IMDG (water):** Not regulated

**Special Provisions:** None

## Section 15: REGULATORY INFORMATION

### UNITED STATES

**SARA Title III (Superfund Amendments and Reauthorization Act) 313 Reportable Ingredients:** No

**TSCA (Toxic Substance Control Act) status:** Not regulated.

### STATE REGULATIONS

The following components appear in one or more of the following states hazardous substances list

Component	CAS #	CA	MA	MN	NJ	PA	RI
Bismuth	7440-69-9	No	No	No	Yes	Yes	No

**California Proposition 65:** This product is not known to contain any components for which the State of California has found to cause cancer, birth defects or other reproductive harm.

### CANADA

**WHMIS (Workplace Hazardous Materials Information System):** Not regulated.

**Domestic Substance List (Inventory):** All components of this product are included in inventory, exempt, or notified.

### GENERAL COMMENTS

None

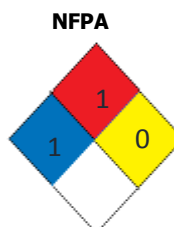
## Section 16: OTHER INFORMATION

**Information Contact:** [sds@finemetalscorp.com](mailto:sds@finemetalscorp.com)

**Issue Date:** 7/3/1999

**Revision Date:** 1/1/2015

HMIS®(II)	
<b>Health:</b>	<b>1</b>
<b>Flammability:</b>	<b>1</b>
<b>Reactivity:</b>	<b>0</b>
<b>PPE:</b>	



**Ratings range from 0 (no hazard) to 4 (severe hazard)**

The information contained in this SDS is believed to be correct, but is not all inclusive and shall be used only as a guide. Fine Metals Corporation shall not be liable for any damage resulting from handling or from contact with the product listed in the SDS. Any comments or questions should be directed to:

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15117 Washington Highway  
P O Box 1055  
Ashland VA 23005  
(804) 227-3381