

BISMUTH

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1. Product Identification

Synonyms: none

CAS No.: 7440-69-9

Atomic Weight: 208.9804

Chemical Formula: Bi

Product Codes: CHEM-603 and others

2. Composition/Information on Ingredients

Ingredient	CAS No	Percent	Hazardous
Bismuth	7440-69-9	99-100%	Yes

3. Hazards Identification

Emergency Overview:

CAUTION! MAY CAUSE IRRITATION TO SKIN, EYES, AND RESPIRATORY TRACT.

SAF-T-DATA^(tm) Ratings

Health Rating: 1 - Slight

Flammability Rating: 0 - None

Reactivity Rating: 1 - Slight

Contact Rating: 0 - None

Lab Protective Equip: GOGGLES; LAB COAT

Storage Color Code: Orange (General Storage)

Potential Health Effects

Inhalation:

May cause irritation to the respiratory tract. Symptoms may include coughing and shortness of breath.

Ingestion:

Bismuth salt is poorly absorbed. Should absorption occur, symptoms may include loss of appetite, headache, skin rashes, kidney damage, and rarely mild jaundice.

Skin Contact:

May cause mild irritation. Absorption may occur only minimally through broken skin.

Eye Contact:

May cause mild irritation.

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.

Aggravation of Pre-existing Conditions:

No information found.

4. First Aid Measures

Inhalation:

Remove to fresh air. Get medical attention for any breathing difficulty.

Ingestion:

Give several glasses of water to drink to dilute. If large amounts were swallowed, get medical advice.

Skin Contact:

Wash exposed area with soap and water. Get medical advice if irritation develops.

Eye Contact:

Immediately flush eyes with plenty of water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get medical attention if irritation persists.

5. Fire Fighting Measures

Fire:

Moderate fire hazard when exposed to heat or flame. Readily flammable in powder form.

Explosion:

Fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.

Fire Extinguishing Media:

Use any means suitable for extinguishing surrounding fire. Do not use water on fire where molten metal is present.

Special Information:

In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

Toxic bismuth fumes may be released during a fire.

6. Accidental Release Measures

Remove all sources of ignition. Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Spills: Clean up spills in a manner that does not disperse dust into the air. Use non-sparking tools and equipment. Reduce airborne dust and prevent scattering by moistening with water. Pick up spill for recovery or disposal and place in a closed container.

7. Handling and Storage

Keep in a tightly closed container. Protect from physical damage. Store in a cool, dry, ventilated area away from sources of heat, ignition sources, moisture and incompatibilities. Avoid dust dispersal. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.

8. Exposure Controls/Personal Protection

Airborne Exposure Limits:

None established.

Ventilation System:

A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

Personal Respirators (NIOSH Approved):

For conditions of use where exposure to the dust or mist is apparent, a half-face dust/mist respirator may be worn. For emergencies or instances where the exposure levels are not known, use a full-face positive-pressure, air-supplied respirator. **WARNING:** Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

Skin Protection:

Wear protective gloves and clean body-covering clothing.

Eye Protection:

Use chemical safety goggles. Maintain eye wash fountain and quick-drench facilities in work area.

9. Physical and Chemical Properties

Appearance:

Grayish-white or silver metallic granules, chunks or crystals.

Odor:

Odorless.

Solubility:

Insoluble in water.

Specific Gravity:

9.75

pH:

No information found.

% Volatiles by volume @ 21°C (70°F):

0

Boiling Point:

No information found.

Melting Point:

271°C (520°F)

Vapor Density (Air=1):

No information found.

Vapor Pressure (mm Hg):

1 @ 1021°C (1870°F)

Evaporation Rate (BuAc=1):

No information found.

10. Stability and Reactivity

Stability:

Stable under ordinary conditions of use and storage.

Hazardous Decomposition Products:

No hazardous decomposition products.

Hazardous Polymerization:

Will not occur.

Incompatibilities:

Aluminum, bromine trifluoride, strong oxidizers, strong acids, nitrosyl fluoride, ammonium nitrate, chloric acid, chlorine, iodine pentafluoride, nitric acid, perchloric acid, and bismuth hydroxide plus aluminum hydroxide.

Conditions to Avoid:

Heat, flame, ignition sources, dusting, air, light and incompatibles.

11. Toxicological Information

Toxicological Data:

For Bismuth; Oral rat LD₅₀: 5g/kg

Ingredient	Known	Cancer Lists	
		NTP Carcinogen	IARC Category
Bismuth Metal (7440-69-9)	No	No	None

12. Ecological Information

Environmental Fate:

No information found.

Environmental Toxicity:

No information found.

13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to a RCRA approved waste facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

14. Transport Information

Not regulated.

15. Regulatory Information

Ingredient	Chemical Inventory Status - Part 1			
	TSCA	EC	Japan	Australia
Bismuth Metal (7440-69-9)	Yes	Yes	No	Yes

Ingredient	Chemical Inventory Status - Part 2			
	Korea	Canada	DSL	NDSL Phil.
Bismuth Metal (7440-69-9)	Yes	Yes	No	Yes

Federal, State & International Regulations - Part 1

Ingredient	SARA 302		SARA 313	
	RQTPQ	List	Chemical	Catg.
Bismuth Metal (7440-69-9)	No	No	No	No

Federal, State & International Regulations - Part 2

	RCRA		TSCA
	CERCLA	261.33	8(d)
Bismuth Metal (7440-69-9)	No	No	No

Chemical Weapons Convention: No TSCA 12(b): No CDTA: No

SARA 311/312: Acute: Yes Chronic: Yes Fire: No Pressure: No

Reactivity: No (Pure / Solid)

Australian Hazchem Code: None allocated.

Poison Schedule: None allocated.

WHMIS:

This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

16. Other Information

Label Hazard Warning:

CAUTION! MAY CAUSE IRRITATION TO SKIN, EYES, AND RESPIRATORY TRACT.

Label Precautions:

Avoid breathing dust or fumes.

Avoid contact with eyes, skin and clothing.

Use with adequate ventilation.

Keep container closed.

Wash thoroughly after handling.

Label First Aid:

(For powder or dust) If inhaled, remove to fresh air. Get medical attention for any breathing difficulty. In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes. Get medical attention if irritation develops or persists.

Product Use:

Laboratory Reagent and Consumer Hobby.

Revision Information:

None

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