



Materials Safety Data Sheet

Bismuth Metal Powder

1. Product and Company Identification

Product Name: Bismuth metal

Formula: Bi

CAS: 7440-69-9

EC No.: 231-177-4

Synonyms: None

Recommended Use: Scientific research

Uses advised against: N/A

Supplier: UltraPurMat Group Co., Ltd

Address: Room307, Building2, Tengfei Innovation Center, No38Gaoxin 6th Road, High-tech Zone,
Xian Shaanxi China

Tel: +86-29-88993870

Email: sales@ulpmat.com

Website: www.ulpmat.com

24-Hour Emergency Contact: +86-13572830939

2. Hazards Identification

Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 (CLP).

Flammable solids Category 1 (H228)

GHS Label elements, including precautionary statements

Pictogram:



Signal Word: Danger

Hazard statement(s):

H228 Flammable solid

Precautionary Statement(s):

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking

P280 Wear protective gloves/protective clothing/eye protection.

P240 Ground and bond container and receiving equipment.

P241 Use explosion-proof electrical/ventilating/lighting equipment.

P370+P378 In case of fire: Use powder extinguisher or sand to extinguish -never use water

Other hazards:

In accordance with Annex XIII of the REACH Regulation, inorganic substances do not require assessment.

3. Composition

Components	CAS	Classification (H)	Concentration
Bismuth (Bi)	7440-69-9	H228	≤100%

4. First Aid Procedures

Description of first aid measures

General Treatment: Seek medical attention if symptoms persist.

Inhalation: Remove person to fresh air. If respiratory symptoms occur, seek medical attention.

Ingestion: Seek Medical Attention.

Skin: Remove any contaminated clothing. Wash affected area with mild soap and water. Seek medical attention if symptoms develop or persist.

Eyes: Flush eyes with lukewarm water, including under upper and lower eyelids, for at least 15 minutes. Seek medical attention if symptoms develop or persist.

Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11.

Indication of any immediate medical attention and special treatment needed

No data available

5. Firefighting Measures

Extinguishing media

Extinguishing Media: Dry sand, dry powder, Class D extinguisher

Unsuitable extinguishing media: Do not use water or foam on burning metal powder.

Special hazards arising from the substance or mixture

If this product is involved in a fire, the following can be released:

Bismuth oxide fumes may be generated under fire conditions.

Advice for firefighters

Use full-face, self-contained breathing apparatus with full protective clothing to prevent contact with skin and eyes. See section 10 for decomposition products.

Further information

No data available

6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid dust formation. Avoid breathing Vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

For personal protection see section 8.

Environmental precautions

Prevent product from contacting water or entering drains.

Methods and materials for containment and cleaning up

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal. Remove all ignition sources. Avoid generating dust clouds. Use non-sparking tools for collection.

Reference to other sections

For disposal see section 13.

7. Handling and Storage

Precautions for safe handling

Ensure adequate ventilation. Avoid ingestion and inhalation. Avoid formation of dust. Do not get in eyes, on skin, or on clothing. Handle in accordance with good industrial hygiene and safety practice. Keep away from food, drink and animal feeding stuffs. For precautions see section 2.

Conditions for safe storage, including any incompatibilities

Store in a cool, dry and well-ventilated place in a tightly sealed container. Store under dry, inert atmosphere if feasible.

Storage class Class 4.1B

Store apart from materials and conditions listed in section 10.

Specific end use(s)

Apart from the uses mentioned in section 1 no other specific uses are stipulated

8. Exposure Controls/Personal Protection

Exposure controls

Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Protective gloves (The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.)

Body Protection

Protective work clothing. Wear close-toed shoes and long sleeves/pants.

Respiratory protection

Use a particle filter respirator (P2 or P3 according to EN 143) when dust is generated, as a backup to engineering controls. Risk assessment should be performed to determine if purifying respirators are appropriate. Only use equipment tested and approved under appropriate government standards

Control of environmental exposure

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

9. Physical and Chemical Characteristics

Information on basic physical and chemical properties

Appearance

Form: powder

Colour: Silver-grey metallic

Odor: Odorless

pH: No data available

Melting point/range: 271.4 °C

Boiling point/range: 1560 °C

Flash point: No data available

Evaporation rate: No data available

Flammability (solid, gas): Flammable solid (Category 1), dust may form explosive mixtures with air under certain conditions.

Upper/lower flammability or explosive limits: No data available

Vapor pressure: No data available

Relative density: 9.78 g/cm³

Water solubility: Insoluble in water.

Partition coefficient: n-octanol/water: not relevant (inorganic)

Auto-ignition temperature: No data available

Decomposition temperature: No data available

Viscosity: No data available

Other information

Molecular formula: Bi

Atomic weight: 208.98 g/mol

10. Stability and reactivity

Reactivity

Fine powder may form combustible dust-air mixtures under certain conditions.

Chemical stability

Stable under recommended storage conditions.

Possibility of hazardous reactions

No data available.

Conditions to avoid

Heat, flames and sparks.

Incompatible materials

Strong bases, Strong oxidizing agents, Halogens

Hazardous decomposition products

Metal oxide fume

In the event of fire: see section 5

11. Toxicological Information

Information on toxicological effects**Acute toxicity**

LD50 (oral, rat): approximately 2000 mg/kg body weight.

Skin corrosion/irritation

No data available

Serious eye damage/eye irritation

No data available

Respiratory or skin sensitisation

No data available

Germ cell mutagenicity

No data available

Carcinogenicity

There are no known carcinogenic chemicals in this product.

Reproductive toxicity

No data available

Specific target organ toxicity -single exposure

No data available

Specific target organ toxicity -repeated exposure

No data available

Aspiration hazard

No data available

Additional Information

No data available

12. Ecological Information

Toxicity

No data available

Persistence and degradability

No data available

Bioaccumulative potential

No data available

Mobility in soil

No data available

Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

Other adverse effects

This product does not contain any known or suspected endocrine disruptors.

13. Disposal Considerations

Waste treatment methods

Dispose of in accordance with all applicable local and national regulations. Use recovery/recycling where feasible. Disposal by licensed waste contractor in accordance with local regulations. Empty containers may contain hazardous residues. Do not cut, puncture or weld on or near to the container. Labels should not be removed from containers until they have been cleaned. Contaminated containers must not be treated as household waste.

14. Transportation Information

ADR

UN Number: UN 3089

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

Hazard Class: 4.1

Packing Group: II

IMDG

UN Number: UN 3089

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

Hazard Class: 4.1

Packing Group: II

IATA

UN Number: UN 3089

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

Hazard Class: 4.1

Packing Group: II

15. Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture

Regulation (EC) 1907/2006, REACH, Annex XIV list of substances subject to authorisation: Not applicable

Regulation (EC) 1907/2006, REACH, Annex XVII restrictions on the manufacture, placing on the market and use of certain dangerous substances: Not applicable

Regulation (EC) 1005/2009 on substances that deplete the ozone layer: Not applicable

Regulation (EC) 850/2004 on persistent organic pollutants, amended by (EU) No 2019/1021: Not applicable

Chemical Safety Assessment

No Chemical Safety Assessment has been carried out for this substance

16. Other information

Revision Date

2026-02-07

Version

1.0

Disclaimer

The information of this safety data sheet 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.