

# SAFETY DATA SHEET

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## SECTION 1. IDENTIFICATION

**Product Identifier:** Bismuth Oxide Nanoparticle Dispersion

**Product Code:** BI-OX-01-NPD

**CAS Number:** 1304-76-3

**Relevant identified uses of the substance:** Scientific research and development

Supplier details:

American Elements  
10884 Weyburn Ave.  
Los Angeles, CA 90024  
Tel: +1 310-208-0551  
Fax: +1 310-208-0351  
Emergency telephone number:  
+1 800-424-9300

## SECTION 2. HAZARDS IDENTIFICATION

Classification of the substance or mixture

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)



Signal word Warning

Hazard statement(s)

H319 Causes serious eye irritation.

H335 May cause respiratory irritation

Precautionary statement(s)

P233: Keep container tightly closed.

P210: Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

P240: Ground/Bond container and receiving equipment.

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

P242: Use only non-sparking tools.

P243: Take precautionary measures against static discharge.

P271: Use only outdoors or in a well-ventilated area.

P280: Wear protective gloves/protective clothing/eye protection/face protection.

P261: Avoid breathing dust/fume/gas/mist/vapors/spray.

P264: Wash hands thoroughly after handling.

P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P303+P361+P353: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

P312 Call a POISON CENTER or doctor/ physician if you feel unwell.

P370+P378: In case of fire: Use ... for extinction.

Hazards not otherwise classified (HNOC) or not covered by GHS

None

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## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substances

Bismuth Oxide (Bi<sub>2</sub>O<sub>3</sub>) CAS#: 1304-76-3

Water (H<sub>2</sub>O) CAS#: 7732-18-5

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## SECTION 4. FIRST AID MEASURES

Description of first aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labeling (see section 2.2) and/or in section 11

Indication of any immediate medical attention and special treatment needed

no data available

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## SECTION 5. FIREFIGHTING MEASURES

Extinguishing media

Suitable extinguishing media

Use CO<sub>2</sub>, dry chemical, or foam for extinction.

Special hazards arising from the substance or mixture

The product is not flammable.

Advice for firefighters

Wear self contained breathing apparatus for firefighting if necessary.

Further information

no data available

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## SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid dust formation. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. For personal protection see section 8.

Environmental precautions

Avoid release to the environment. See Section 12 for additional ecological information.

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.

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## SECTION 7. HANDLING AND STORAGE

Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. Normal measures for preventive fire protection. For precautions see section 2.2.

Conditions for safe storage, including any incompatibilities

Keep containers tightly closed in a dry, cool and well-ventilated place.

Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

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## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

This product does not contain any hazardous materials with occupational exposure limits established by the region

specific regulatory bodies.

Exposure controls

Appropriate engineering controls

Ensure adequate ventilation, especially in confined areas. Use explosion-proof electrical/ventilating/lighting/equipment. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protective equipment

Eye/face protection Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

For any handling steps where the substance is in particulate form or in a suspension with pure water where the substance is not solubilized, the gloves must be comprised of material that successfully passes ASTM F-1671

Body Protection

Impervious clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

The EPA mandates the use of full face respirators with minimum N100 grade cartridges if there is any risk of exposure to the dust. For nuisance exposures use type P95 (US) or type P1 (EU EN 143) particle respirator. For higher level protection use type OV/AG/P99 (US) or type ABEK-P2 (EU EN 143) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure  
Do not let product enter drains.

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## **SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

Appearance: Liquid  
Odor: Odorless  
Odor Threshold:  
pH: no data available  
Melting point/freezing point: no data available  
Initial boiling point and boiling range: no data available  
Flash point: no data available  
Evaporation rate: no data available  
OSHA Flammability Class: no data available  
Upper/lower flammability or explosive limits: The product is not flammable.  
Vapor pressure: no data available  
Vapor density (air = 1): no data available  
Relative density (water = 1): no data available  
Water solubility: Insoluble in water  
Partition coefficient - noctanol/water: no data available  
Auto-ignition temperature: no data available  
Decomposition temperature: no data available  
Viscosity: no data available  
Explosive properties: The product is not explosive.

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## **SECTION 10. STABILITY AND REACTIVITY**

Reactivity  
None known, based on information available.  
Chemical stability  
Moisture/oxygen sensitive.  
Possibility of hazardous reactions  
None under normal processing.  
Conditions to avoid  
Avoid heat, flames, sparks and other sources of ignition. Minimize contact with material. Avoid inhalation of material or combustion by-products. Keep out of water supplies and sewers. Do not store at elevated temperatures.  
Incompatible materials  
Strong acids, strong bases, strong oxidizers, nitrates  
Hazardous decomposition products  
Other decomposition products - Hydrogen  
In the event of fire: see section 5

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## **SECTION 11. TOXICOLOGICAL INFORMATION**

Acute toxicity  
Acute oral toxicity LD50 rat: Not listed  
Acute inhalation toxicity: Not listed  
Acute dermal toxicity LD50 rabbit: Not listed  
Skin corrosion/irritation

No information available  
Serious eye damage/eye irritation  
No information available  
Respiratory or skin sensitization  
No information available  
Germ cell mutagenicity  
no data available  
Carcinogenicity  
Not listed  
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  
Product may be an aspiration hazard  
Additional Information  
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated

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## **SECTION 12. ECOLOGICAL INFORMATION**

Ecotoxicity  
Freshwater Fish: No information available  
Persistence and degradability  
No information available  
Bioaccumulative potential  
No information 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  
Do not allow product to enter surface waters, wastewater or soil.

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## **SECTION 13. DISPOSAL CONSIDERATIONS**

Waste treatment methods  
Product  
Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.  
Contaminated packaging

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## **SECTION 14. TRANSPORT INFORMATION**

US DOT Information  
Not dangerous goods  
IMDG Information  
Not dangerous goods

IATA Information  
Not dangerous goods

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## **SECTION 15. REGULATORY INFORMATION**

SARA 302 Components

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards

Acute Health Hazard

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## **16. OTHER INFORMATION**

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH). The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. American Elements shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. COPYRIGHT 1997-2022 AMERICAN ELEMENTS. LICENSED GRANTED TO MAKE UNLIMITED PAPER COPIES FOR INTERNAL USE ONLY.