SAFETY DATA SHEET

Date Accessed: 03/28/2024
Date Revised: 01/15/2022

SECTION 1. IDENTIFICATION

Product Name: Bismuth Oxide Nanoparticle Dispersion

Product Number: All applicable American Elements product codes, e.g. BI-OX-01-NPD

CAS #: 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

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substances
Bismuth Oxide (Bi_2O_3) CAS#: 1304-76-3
Water (H_2O) CAS#: 7732-18-5

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

SECTION 5. FIREFIGHTING MEASURES

Extinguishing media
Suitable extinguishing media
Use CO_2, 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

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.

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

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 protectionSafety 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.

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.

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

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

---

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.

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

SECTION 14. TRANSPORT INFORMATION

US DOT Information
Not dangerous goods
IMDG Information
Not dangerous goods

IATA Information
Not dangerous goods

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

SECTION 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.