

MATERIAL SAFETY DATA SHEET**Product Name:** Bismuth nitrate pentahydrate**CAS No.:** 10035-06-0**Version:** 0**1. Identification**

Product Code : 90347
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2. Composition/Information on Ingredients

Ingredient	CAS No	Percent
BISMUTH NITRATE PENTAHYDRATE	10035-06-0	99-100%

3. Hazards Identification

Emergency Overview : DANGER! STRONG OXIDIZER. CONTACT WITH OTHER MATERIAL MAY CAUSE FIRE.
HARMFUL IF SWALLOWED. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT.

Saf-T-Data

Health Rating : 2 - Moderate
Flammability Rating : 0 - None
Reactivity Rating : 3 - Severe (Oxidizer)
Contact Rating : 1 - Slight

Potential Health Effects

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

Ingestion : Bismuth salts are poorly absorbed. Should absorption occur, symptoms may include loss of appetite, headache, skin rashes, kidney damage, and rarely mild jaundice? Production of nitrites in the intestine may cause headache, flushing skin, vomiting, falling blood pressure, cyanosis, and in severe cases convulsions and coma.

Skin Contact : May cause mild irritation.

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.

Aggravation of Pre-existing Conditions : No information found.

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|----------------------------|---|---|
| General information | : | Get medical advice/attention if you feel unwell. If medical advice is needed, have product container or label at hand. Show this safety data sheet to the doctor in attendance. |
| Inhalation | : | Remove to fresh air. Get medical attention for any breathing difficulty. |
| Ingestion | : | Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention. |
| 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 |

5. Fire fighting measures

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|---|---|--|
| Fire | : | Not combustible, but substance is a strong oxidizer and its heat of reaction with reducing agents or combustibles may cause ignition. |
| Explosion | : | Contact with oxidizable substances may cause extremely violent combustion. |
| Fire Extinguishing Media | : | Use any means suitable for extinguishing surrounding fire. Water spray may be used to keep fire exposed containers cool. |
| Specific hazards arising from the chemical | : | During fire, gases hazardous to health may be formed. |
| 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. |

6. Accidental Release Measures

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| Personal precautions, protective equipment and emergency procedures | : | Keep unauthorized personnel away. Keep upwind. Ventilate closed spaces before entering them. Avoid inhalation of dust. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. |
| Methods and material for containment and cleaning up | : | Sweep up and place in a clearly labeled container for chemical waste.
Clean surface thoroughly to remove residual contamination. |
| Notification Procedures | : | Prevent entry into waterways, sewer, basements or confined areas. Inform authorities if large amounts are involved. |
| Environmental precautions | : | Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground. |

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- Precautions for safe handling** : Use personal protective equipment as required. Avoid contact with eyes, skin, and clothing. Avoid inhalation of dust. Wash thoroughly after handling.
- Conditions for safe storage, including any incompatibilities** : Keep containers tightly closed. Store in cool, dry place. Store in a well-ventilated place.

8. Exposure Controls Personal Protection

- Control parameters**
- Occupational 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 dust or mist is apparent and engineering controls are not feasible, a particulate respirator (NIOSH type N95 or better filters) may be worn. If oil particles (e.g. lubricants, cutting fluids, glycerine, etc.) are present, use a NIOSH type R or P filter. 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.
- Other** : Wear suitable protective clothing.
- Respiratory protection** : In case of inadequate ventilation use suitable respirator.
- Hygiene measures** : Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Provide eyewash station and safety shower.

9. Physical and Chemical Properties

- Appearance** : Transparent, colorless crystals.

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Odor	: Slight nitric acid odor.
pH	: No information found
Melting point/freezing point	: 75 - 80C (167 - 176F) Decomposes.
Initial boiling point and boiling range	: Not applicable.
Flash Point	: No information found.
Vapor pressure	: No information found.
Vapor density	: No information found.
Relative density	: 2.83
Solubility in water	: Slowly decomposes in water to form subnitrate.
Solubility (other)	: No data available.
Formula	: $\text{Bi}(\text{NO}_3)_3 \cdot 5\text{H}_2\text{O}$
Molecular Weight	: 485.07 g/mol

10. Stability and Reactivity

Stability	: Stable under ordinary conditions of use and storage. Hygroscopic.
Hazardous Decomposition Products	: Toxic metal fumes may form when heated to decomposition.
Hazardous Polymerization	: Will not occur.
Incompatibilities:	: Strong acids, strong reducing agents, powdered metals and organic/combustible/easily oxidizable materials.
Conditions to Avoid:	: Heat, moisture, dusting, contact with combustibles and incompatibles.

11. Toxicological Information**Information on likely routes of exposure**

Ingestion	: May cause irritation of the gastrointestinal tract.
Inhalation	: May cause irritation to the respiratory system.
Skin contact	: May cause irritation.
Eye contact	: May cause temporary eye irritation.

Information on toxicological effects**Acute toxicity (list all possible routes of exposure)**

Oral Product	: LD50 oral rat: 4042 mg/Kg
Dermal Product	: No data available.
Inhalation Product	: No data available.
Repeated dose toxicity Product	: No data available.
Skin corrosion/irritation Product	: May cause skin irritation.
Serious eye damage/eye irritation	: May irritate eyes.

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Respiratory or skin sensitization Product	: Not a skin sensitizer.
Carcinogenicity Product	: This substance has no evidence of carcinogenic properties.
IARC Monographs on the Evaluation of Carcinogenic Risks to Humans DIOXANE	: No carcinogenic components identified.
US. National Toxicology Program (NTP) Report on Carcinogens DIOXANE	: No carcinogenic components identified.
US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)	: No carcinogenic components identified.
Germ cell mutagenicity	
In vitro Product	: No mutagenic components identified.
In vivo Product	: No mutagenic components identified.
Reproductive toxicity Product	: Investigated as a reproductive effector.
Specific target organ toxicity - single exposure Product	: No data available.
Specific target organ toxicity - repeated exposure Product	: No data available.
Aspiration hazard Product	: Not classified.
Other effects	: None known.

12. Ecological Information

Ecotoxicity
Acute hazards to the aquatic environment :

Fish Product	: No data available.
Aquatic invertebrates Product	: No data available.

Chronic hazards to the aquatic environment :

Fish Product	: No data available.
Aquatic invertebrates Product	: No data available.
Toxicity to Aquatic Plants Product:	: No data available.

Persistence and degradability

Biodegradation Product	: There are no data on the degradability of this product.
BOD/COD ratio Product	: No data available.

Bioaccumulative potential

Bioconcentration factor (BCF) Product	: No data available on bioaccumulation.
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Product

Partition coefficient n-octanol / water (log Kow) Product	: No data available.
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Mobility in soil	: No data available.
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Other adverse effects	: No data available.
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- Disposal instructions** : Discharge, treatment, or disposal may be subject to national, state, or local laws. Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.
- Contaminated packaging** : Since emptied containers retain product residue, follow label warnings even after container is emptied.

14. Transport Information

	UN No.	UN proper shipping name	Hazard Class(es)	Packaging group	Marine Pollutant
DOT	UN1477	BISMUTH NITRATE	5.1	II	No
IMDG	UN1477	BISMUTH NITRATE	5.1	II	No
IATA	UN1477	BISMUTH NITRATE	5.1	II	No

15. Regulatory Information

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

Safety, health and environmental regulations/legislation specific for the substance or mixture
No Data Available.

16. Other Information**Issue Date :**01/08/2014**Version : 0**

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