

## BISMUTH NITRATE

## Material Safety Data Sheet

Mallinckrodt Chemical Inc.

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Emergency Telephone Number  
314-539-1600

Effective Date: 08-28-85

## PRODUCT IDENTIFICATION:

Synonyms: Nitric acid, bismuth (3+) salt, pentahydrate; bismuth ternitrate

Formula CAS No.: 10035-06-0 (Hydrate)

Molecular Weight: 485.11

TSCA CAS No.: 10361-44-1 (Anhydrous)

Hazardous Ingredients: Bismuth nitrate

Chemical Formula:  $\text{Bi}(\text{NO}_3)_3 \cdot 5\text{H}_2\text{O}$ 

## PRECAUTIONARY MEASURES

DANGER! STRONG OXIDIZER. CONTACT WITH OTHER MATERIAL MAY CAUSE FIRE.  
HARMFUL IF SWALLOWED. CAUSES IRRITATION.

Keep from contact with clothing and other combustible materials.  
Do not store near combustible materials.  
Store in a tightly closed container.  
Remove and wash contaminated clothing promptly.  
Avoid contact with eyes, skin and clothing.  
Wash thoroughly after handling.

## EMERGENCY FIRST AID

If swallowed, induce vomiting immediately by giving two glasses of water and sticking finger down throat. Never give anything by mouth to an unconscious person. In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes. In all cases call a physician.  
SEE SECTION 5.

## Physical Data

## SECTION 1

Appearance: Transparent, colorless crystals.

Odor: Slight nitric odor.

Solubility: Slowly decomposes in water to form subnitrate.

Boiling Point: Not applicable.

Vapor Density (Air=1): No information found.

Melting Point: Decomposes @ 75-80 C  
(167-176 F).

Vapor Pressure (mm Hg): No information found.

Density: 2.83

Evaporation Rate: No information found.

Fire and Explosion  
Information

## SECTION 2

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.

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.

#### Reactivity Data

#### SECTION 3

##### Stability:

Stable under ordinary conditions of use and storage. Hygroscopic.

##### Hazardous Decomposition Products:

Emits oxides of bismuth and nitrogen when heated to decomposition.

##### Hazardous Polymerization:

This substance does not polymerize.

##### Incompatibilities:

Aluminum, cyanides, esters, phosphorus, stannous chloride, sodium hypophosphite, thiocyanates, boron phosphide, and phospham.

#### Leak/Spill Disposal Information

#### SECTION 4

Ventilate area of leak or spill. Clean-up personnel may require respiratory protection from dust. Spills: Sweep up and containerize for reclamation or disposal. Vacuuming or wet sweeping may be used to avoid dust dispersal. Disposal: Whatever cannot be saved for reclamation may be delivered to an approved waste disposal facility.

Ensure compliance with local, state and federal regulations.

#### Health Hazard Information

#### SECTION 5

##### A. Exposure/Health Effects

##### Inhalation:

May cause mild irritation to mucous membranes.

##### 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.

##### B. FIRST AID

##### Inhalation:

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

##### Ingestion:

If swallowed, induce vomiting immediately by giving two

glasses of water and sticking finger down throat. Never give anything by mouth to an unconscious person. Call physician immediately.

**Skin Exposure:** Wash exposed area with soap and water. Get medical advice if irritation develops.

**Eye Exposure:** Wash thoroughly with running water. Get medical advice if irritation develops.

C. TOXICITY (RTECS, 1986)

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No LD50/LC50 information found relating to normal routes of occupational exposure.

Occupational Control Measures SECTION 6  
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Airborne Exposure Limits: None established.

Ventilation System: A local exhaust system which captures the contaminant at its source is recommended to prevent dispersion of the contaminant into the workroom air.

Personal Respirators (NIOSH Approved) For conditions of use where exposure to the dust is apparent, a dust/mist respirator may be worn. For emergencies, a self-contained breathing apparatus may be necessary.

Skin Protection: Wear protective gloves and clean body-covering clothing.

Eye Protection: Use chemical safety goggles. Contact lenses should not be worn when working with this material. Maintain eye wash fountain and quick-drench facilities in work area.

Storage and Special Information SECTION 7  
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Keep in a tightly closed container, stored in a cool dry ventilated area. Protect against physical damage. Separate from combustible, organic or other readily oxidizable materials.

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Addendum to Material Safety Data Sheet

REGULATORY STATUS

Hazard Categories for SARA  
Section 311/312 Reporting

Acute	Chronic	Fire	Pressure	Reactive
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X				X

Product or Components of Product:	SARA EHS Sec. 302		SARA Sec. 313 Chemicals		CERCLA Sec. 103	RCRA Sec.
	RQ	TPQ	Name List	Chemical Category	RQ lbs	261.33
BISMUTH NITRATE (10361-44-1)	No	No	No	No	No	No

## SARA Section 302 EHS RQ:

Reportable Quantity of Extremely Hazardous Substance, listed at 40 CFR 355.

## SARA Section 302 EHS TPQ:

Threshold Planning Quantity of Extremely Hazardous substance. An asterisk (\*) following a Threshold Planning Quantity signifies that if the material is a solid and has a particle size equal to or larger than 100 micrometers, the Threshold Planning Quantity = 10,000 LBS.

## SARA Section 313 Chemicals:

Toxic Substances subject to annual release reporting requirements listed at 40 CFR 372.65.

## CERCLA Sec. 103:

Comprehensive Environmental Response, Compensation and Liability Act (Superfund) Releases to air, land or water of these hazardous substances which exceed the Reportable Quantity (RQ) must be reported to the National Response Center, (800-424-8802); Listed at 40 CFR 302.4

## RCRA:

Resource Conservation and Recovery Act. Commercial chemical product wastes designated as acute hazards and toxic under 40 CFR 261.33

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