

Material Safety Data Sheet

Bismuth nitrate pentahydrate

ACC# 03190

Section 1 - Chemical Product and Company Identification

MSDS Name: Bismuth nitrate pentahydrate

Catalog Numbers: AC315150000, AC315150250, AC402610000, AC402610050, AC402615000, S71373, S713731, S75055, S93140, B337-500

Synonyms: Nitric acid, bismuth(3+) salt, pentahydrate; Bismuth trinitrate pentahydrate.

Company Identification:

Fisher Scientific
1 Reagent Lane
Fair Lawn, NJ 07410

For information, call: 201-796-7100

Emergency Number: 201-796-7100

For CHEMTREC assistance, call: 800-424-9300

For International CHEMTREC assistance, call: 703-527-3887

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
10035-06-0	Bismuth nitrate pentahydrate	98	unlisted

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: white crystals.

Danger! Strong oxidizer. Contact with other material may cause a fire. Causes eye, skin, and respiratory tract irritation. May cause methemoglobinemia. Hygroscopic (absorbs moisture from the air).

Target Organs: Blood, respiratory system, eyes, skin.

Potential Health Effects

Eye: Causes eye irritation.

Skin: Causes skin irritation.

Ingestion: May cause irritation of the digestive tract. Ingestion of nitrate containing compounds can lead to methemoglobinemia.

Inhalation: Dust is irritating to the respiratory tract. May cause methemoglobinemia, cyanosis (bluish discoloration of skin due to deficient oxygenation of the blood), convulsions, tachycardia, dyspnea (labored breathing), and death. May cause acute pulmonary edema, asphyxia, chemical pneumonitis, and upper airway obstruction caused by edema.

Chronic: May cause kidney injury. May cause methemoglobinemia, which is characterized by chocolate-brown colored blood, headache, weakness, dizziness, breath shortness, cyanosis (bluish skin due to deficient oxygenation of blood), rapid heart rate, unconsciousness and possible death.

Section 4 - First Aid Measures

Eyes: Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

Skin: Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid if irritation develops or persists. Wash clothing before reuse.

Ingestion: Do not induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Get medical aid.

Inhalation: Remove from exposure and move to fresh air immediately. Get medical aid if cough or other symptoms appear. Do NOT use mouth-to-mouth resuscitation. If breathing has ceased apply artificial respiration using oxygen and a suitable mechanical device such as a bag and a mask.

Notes to Physician: For methemoglobinemia, administer oxygen alone or with Methylene Blue depending on the methemoglobin concentration in the blood.

Antidote: Methylene blue, alone or in combination with oxygen is indicated as a treatment in nitrite induced methemoglobinemia.

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Strong oxidizer. Contact with other material may cause fire.

Extinguishing Media: May require flooding with water in order to eliminate hazardous reactions since the materials generate their own oxygen.

Flash Point: Not applicable.

Autoignition Temperature: Not applicable.

Explosion Limits, Lower: Not available.

Upper: Not available.

NFPA Rating: (estimated) Health: 2; Flammability: 0; Instability: 1; Special Hazard: OX

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks: Vacuum or sweep up material and place into a suitable disposal container. Clean up spills immediately, observing precautions in the Protective Equipment section. Avoid generating dusty conditions. Keep combustibles (wood, paper, oil, etc.,) away from spilled material.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use with adequate ventilation. Minimize dust generation and accumulation. Avoid contact with eyes, skin, and clothing. Keep from contact with clothing and other combustible materials. Avoid breathing dust. Inform laundry personnel of contaminant's hazards.

Storage: Do not store near combustible materials. Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Store protected from moisture. Avoid storage on wood floors.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.

Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Bismuth nitrate pentahydrate	none listed	none listed	none listed
Nitric acid, bismuth(3+) salt, anhydrous	none listed	none listed	none listed

OSHA Vacated PELs: Bismuth nitrate pentahydrate: No OSHA Vacated PELs are listed for this chemical. Nitric acid, bismuth(3+) salt, anhydrous: No OSHA Vacated PELs are listed for this chemical.

Personal Protective Equipment

Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin: Wear appropriate gloves to prevent skin exposure.

Clothing: Wear appropriate clothing to prevent skin exposure.

Respirators: Wear a NIOSH/MSHA or European Standard EN 149 approved full-facepiece airline respirator in the positive pressure mode with emergency escape provisions.

Section 9 - Physical and Chemical Properties

Physical State: Crystals

Appearance: white

Odor: none reported

pH: Not available.

Vapor Pressure: Not available.

Vapor Density: Not available.

Evaporation Rate: Not available.

Viscosity: Not available.

Boiling Point: Not available.

Freezing/Melting Point: 30 deg C

Decomposition Temperature: Not available.

Solubility: Not available.

Specific Gravity/Density: 2.83 g/cm³

Molecular Formula: Bi(NO₃)₃·5H₂O

Molecular Weight: 485.11

Section 10 - Stability and Reactivity

Chemical Stability: Stable at room temperature in closed containers under normal storage and handling conditions.

Conditions to Avoid: High temperatures, dust generation, moisture.

Incompatibilities with Other Materials: Reducing agents, strong acids, finely powdered metals, organic materials, combustible materials.

Hazardous Decomposition Products: Nitrogen oxides, bismuth oxide.

Hazardous Polymerization: Has not been reported.

Section 11 - Toxicological Information

RTECS#:

CAS# 10035-06-0: EB2984430

CAS# 10361-44-1: EB2984400

LD50/LC50:

CAS# 10035-06-0:

Oral, mouse: LD50 = 3710 mg/kg;

Oral, rat: LD50 = 4042 mg/kg;

CAS# 10361-44-1:
Oral, mouse: LD50 = >357 mg/kg;

Carcinogenicity:

CAS# 10035-06-0: Not listed by ACGIH, IARC, NTP, or CA Prop 65.
CAS# 10361-44-1: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology: No information found

Teratogenicity: No information found

Reproductive Effects: See actual entry in RTECS for complete information.

Mutagenicity: No information found

Neurotoxicity: No information found

Other Studies:

Section 12 - Ecological Information

No information available.

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

RCRA P-Series: None listed.

RCRA U-Series: None listed.

Section 14 - Transport Information

	US DOT	Canada TDG
Shipping Name:	NITRATES, INORGANIC, N.O.S.	NITRATES INORGANIC NOS (BISMUTH NITRATE, 5HYDRATE)
Hazard Class:	5.1	5.1
UN Number:	UN1477	UN1477
Packing Group:	II	II

Section 15 - Regulatory Information

US FEDERAL

TSCA

CAS# 10035-06-0 is not on the TSCA Inventory because it is a hydrate. It is considered to be listed if the CAS number for the anhydrous form is on the inventory (40CFR720.3(u)(2)).

CAS# 10361-44-1 is listed on the TSCA inventory.

Health & Safety Reporting List

None of the chemicals are on the Health & Safety Reporting List.

Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rule.

Section 12b

None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

CERCLA Hazardous Substances and corresponding RQs

None of the chemicals in this material have an RQ.

SARA Section 302 Extremely Hazardous Substances

None of the chemicals in this product have a TPQ.

SARA Codes

CAS # 10035-06-0: fire.

CAS # 10361-44-1: fire.

Section 313

This material contains Bismuth nitrate pentahydrate (listed as Water Dissociable Nitrate Compounds), 98%, (CAS# 10035-06-0) which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

This material contains Nitric acid, bismuth(3+) salt, anhydrous (listed as Water Dissociable Nitrate Compounds), -%, (CAS# 10361-44-1) which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

Clean Air Act:

This material does not contain any hazardous air pollutants.

This material does not contain any Class 1 Ozone depleters.

This material does not contain any Class 2 Ozone depleters.

Clean Water Act:

None of the chemicals in this product are listed as Hazardous Substances under the CWA.

None of the chemicals in this product are listed as Priority Pollutants under the CWA.

None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA:

None of the chemicals in this product are considered highly hazardous by OSHA.

STATE

CAS# 10035-06-0 is not present on state lists from CA, PA, MN, MA, FL, or NJ.

CAS# 10361-44-1 is not present on state lists from CA, PA, MN, MA, FL, or NJ.

California Prop 65

California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols:

XI O

Risk Phrases:

R 36/37/38 Irritating to eyes, respiratory system and skin.

R 8 Contact with combustible material may cause fire.

Safety Phrases:

S 17 Keep away from combustible material.

S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S 37/39 Wear suitable gloves and eye/face protection.

WGK (Water Danger/Protection)

CAS# 10035-06-0: No information available.

CAS# 10361-44-1: No information available.

Canada - DSL/NDSL

CAS# 10361-44-1 is listed on Canada's DSL List.

Canada - WHMIS

This product has a WHMIS classification of C, D2B.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

Canadian Ingredient Disclosure List

CAS# 10035-06-0 is not listed on the Canadian Ingredient Disclosure List.

CAS# 10361-44-1 is not listed on the Canadian Ingredient Disclosure List.

Section 16 - Additional Information

MSDS Creation Date: 6/07/1999

Revision #4 Date: 4/13/2005

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Fisher be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Fisher has been advised of the possibility of such damages.