SIGMA-ALDRICH

Material Safety Data Sheet

Date Printed: 01/24/2002
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Version 1.0

Section 1 - Product and Company Information

Product Name	BISMUTH(III) NITRATE PENTAHYDRATE, 98%
Product Number	248592
Brand	Aldrich Chemical
Company	Sigma-Aldrich
Street Address	3050 Spruce Street
City, State, Zip, Country	SAINT LOUIS, MO, 63103, US
Technical Phone:	314 771 5765
Emergency Phone:	414 273 3850 Ext. 5996
Fax	800 325 5052

Section 2 - Composition/Information on Ingredient

Substance Name	CAS #	SARA 313
BISMUTH NITRATE PENTAHYDRATE, REAGENTPLUS,99.99+%	10035-06-0	No

Formula BiN3O9
Synonyms Bismuth nitrate pentahydrate, Bismuth trinitrate pentahydrate, Nitric acid, bismuth(3+) salt, pentahydrate

Section 3 - Hazards Identification

Emergency Overview
Oxidizing. Harmful.
Contact with combustible material may cause fire. Harmful by inhalation, in contact with skin and if swallowed. Irritating to eyes, respiratory system, and skin.
Target organ(s): Kidneys.

For additional information on toxicity, please refer to Section 11.

Section 4 - First Aid Measures

Immediate Treatment - Work Site
In case of contact, immediately flush eyes or skin with copious amounts of water for at least 15 minutes while removing contaminated clothing and shoes.

Oral Exposure
If swallowed, wash out mouth with water provided person is conscious. Call a physician.

Inhalation Exposure
If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

Section 5 - Fire Fighting Measures

Conditions of Flammability
May accelerate combustion.

Autoignition Temp: N/A **Flammability:** N/A

Extinguishing Media
Suitable
Water spray.

Firefighting
Protective Equipment
Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.
Specific Hazard(s)
Emits toxic fumes under fire conditions. May accelerate combustion. Contact with other material may cause fire.

Exposure Hazard(s)
Material
Irritant. Harmful solid.

Section 6 - Accidental Release Measures

Procedure to be Followed in Case of Leak or Spill
Evacuate area.

Procedure(s) of Personal Precaution(s)
Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves.

Methods for Cleaning Up
Cover with dry lime or soda ash, pick up, keep in a closed container, and hold for waste disposal. Ventilate area and wash spill site after material pickup is complete.

Section 7 - Handling and Storage

Handling
User Exposure
Avoid breathing dust. Do not get in eyes, on skin, on clothing. Avoid prolonged or repeated exposure.

Storage
Suitable
Keep tightly closed. Keep away from combustible materials, heat, sparks, and open flame. Store in a cool dry place.

Section 8 - Exposure Controls / PPE

Engineering Controls
Use only in a chemical fume hood. Safety shower and eye bath.

Personal Protective Equipment
Other
Wear appropriate NIOSH/MSHA-approved respirator, chemical-resistant gloves, safety goggles, other protective clothing.

General Hygiene Measures
Wash contaminated clothing before reuse. Wash thoroughly after handling.

Section 9 - Physical/Chemical Properties

Appearance

Color	Form
Colorless	Crystals

Molecular Weight: 485.07 AMU

Property	Value	At Temperature or Pressure
pH	N/A	
BP/BP Range	80 °C	760 mmHg

MP/MP Range	30 °C
Freezing Point	N/A
Vapor Pressure	N/A
Vapor Density	N/A
Saturated Vapor Conc.	N/A
SG/Density	2.83 g/cm3
Bulk Density	N/A
Odor Threshold	N/A
Volatile%	N/A
VOC Content	N/A
Water Content	N/A
Solvent Content	N/A
Evaporation Rate	N/A
Viscosity	N/A
Partition Coefficient	N/A
Decomposition Temp.	N/A
Flash Point °F	N/A
Flash Point °C	N/A
Explosion Limits	N/A
Autoignition Temp	N/A
Solubility	N/A

Section 10 - Stability and Reactivity

Stability

Stable

Stable.

Conditions of Instability

Protect from moisture.

Conditions to Avoid

Protect from moisture.

Materials to Avoid

Strong reducing agents, Organic materials, Strong acids, Finely powdered metals.

Hazardous Decomposition Products

Hazardous Decomposition Products

Carbon monoxide, Carbon dioxide, Nitrogen oxides, Bismuth oxides.

Hazardous Polymerization

Hazardous Polymerization

Will not occur.

Section 11 - Toxicological Information

Route of Exposure

Inhalation

Material is irritating to mucous membranes and upper respiratory tract.

Multiple Routes

Harmful if swallowed, inhaled, or absorbed through skin. Causes eye and skin irritation.

Target Organ(s) or System(s)

Kidneys.

Signs and Symptoms of Exposure

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. Symptoms of chronic bismuth toxicity in humans consists of decreased appetite, weakness, rheumatic pain, diarrhea, fever, metal line on the gums, foul breathe, gingivitis, and dermatitis. Jaundice and conjunctival hemorrhage are rare, but have been reported. Bismuth nephropathy with proteinuria may occur. The kidney is the site of highest concentration with the liver being considerably lower. Bismuth does pass into the amniotic fluid and into the fetus.

RTECS Number: EB2984430

Toxicity Data

Oral - Rat: 4,042 mg/kg (LD50)

Oral - Mouse: 3,710 mg/kg (LD50)

Intraperitoneal - Mouse: 71 MG/KG (LD50)

Section 12 - Ecological Information

Section 13 - Disposal Considerations

Appropriate Method of Disposal of Substance or Preparation

The material should be dissolved in: 1) water, 2) acid solution, or 3) oxidized to a water-soluble state. Precipitate the material as the sulfide, adjusting the pH of the solution to 7 to complete precipitation. Filter the insolubles and dispose of them in a hazardous waste site. Destroy any excess sulfide with sodium hypochlorite. Neutralize the solution before flushing down the drain.
Observe all federal, state, and local environmental regulations.

Section 14 - Transport Information

DOT

Proper Shipping Name: Nitrates, inorganic, n.o.s.
UN#: 1477
Class: 5.1
Packing Group: Packing Group II
PIH: Not PIH

IATA

Proper Shipping Name: Nitrates, inorganic, n.o.s.
IATA Number: 1477
Hazard Class: 5.1
Packing Group: II

Section 15 - Regulatory Information

US Classification and Label Text

Indication of Danger

Oxidizing. Harmful.

Risk Statements

Contact with combustible material may cause fire. Harmful by inhalation, in contact with skin and if swallowed. Irritating to eyes, respiratory system, and skin.

Safety Statements

Keep away from combustible material. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing.

US Statements

Target organ(s): Kidneys.

United States Regulatory Information

SARA 313 Listed: No

Section 16 - Other Information

Warranty

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. Sigma-Aldrich Inc., 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.