

# SAFETY DATA SHEET

Revision Date 24-December-2021

Revision Number 6

## 1. Identification

**Product Name** Bismuth(III) nitrate pentahydrate

**Cat No. :** B337-500

**CAS-No** 10035-06-0  
**Synonyms** Nitric acid, bismuth(3+) salt, pentahydrate; Bismuth trinitrate pentahydrate.

**Recommended Use** Laboratory chemicals.  
**Uses advised against** Food, drug, pesticide or biocidal product use.

### Details of the supplier of the safety data sheet

#### Company

**Importer/Distributor**  
Fisher Scientific  
112 Colonnade Road,  
Ottawa, ON K2E 7L6,  
Canada  
Tel: 1-800-234-7437

#### **Manufacturer**

Fisher Scientific Company  
One Reagent Lane  
Fair Lawn, NJ 07410  
Tel: (201) 796-7100

**Emergency Telephone Number** CHEMTREC®, Inside the USA: 800-424-9300  
CHEMTREC®, Outside the USA: 001-703-527-3887

## 2. Hazard(s) identification

### Classification

**WHMIS 2015 Classification** Classified as hazardous under the Hazardous Products Regulations (SOR/2015-17)

|   |            |
|---|------------|
| <b>Oxidizing solids</b>                                     | Category 2 |
| <b>Skin Corrosion/Irritation</b>                            | Category 2 |
| <b>Serious Eye Damage/Eye Irritation</b>                    | Category 2 |
| <b>Specific target organ toxicity (single exposure)</b>     | Category 3 |
| Target Organs - Respiratory system.                         |            |
| <b>Specific target organ toxicity - (repeated exposure)</b> | Category 2 |
| Target Organs - Kidney.                                     |            |

### Label Elements

**Signal Word**  
Danger

**Hazard Statements**  
May intensify fire; oxidizer

Causes skin irritation  
Causes serious eye irritation  
May cause respiratory irritation  
May cause damage to organs through prolonged or repeated exposure

**Precautionary Statements****Prevention**

Obtain special instructions before use  
Do not handle until all safety precautions have been read and understood  
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking  
Keep/Store away from clothing/combustible materials  
Take any precaution to avoid mixing with combustibles  
Avoid breathing dust/fume/gas/mist/vapors/spray  
Wash face, hands and any exposed skin thoroughly after handling  
Use only outdoors or in a well-ventilated area  
Wear protective gloves/protective clothing/eye protection/face protection  
Do not get in eyes, on skin, or on clothing

**Response**

In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish  
IF ON SKIN: Wash with plenty of soap and water  
IF INHALED: Remove person to fresh air and keep comfortable for breathing  
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
IF exposed or concerned: Get medical advice/attention  
If skin irritation occurs: Get medical advice/attention  
Take off contaminated clothing

**Storage**

Store locked up  
Store in a well-ventilated place. Keep container tightly closed

**Disposal**

Dispose of contents/container to an approved waste disposal plant

**Other Hazards**

May cause pulmonary edema

### 3. Composition/Information on Ingredients

| Component                         | CAS-No     | Weight % |
|-----------------------------------|------------|----------|
| Bismuth(III) nitrate pentahydrate | 10035-06-0 | >95      |
| Nitric acid, bismuth(3+) salt     | 10361-44-1 | -        |

### 4. First-aid measures

|                     |  |
|---------------------|--|
| <b>Eye Contact</b>  | Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.            |
| <b>Skin Contact</b> | Wash off immediately with plenty of water for at least 15 minutes. Get medical attention.                                  |
| <b>Inhalation</b>   | Remove from exposure, lie down. Remove to fresh air. If not breathing, give artificial respiration. Get medical attention. |

**Ingestion** Do NOT induce vomiting. Get medical attention.

**Most important symptoms/effects** . May cause methemoglobinemia  
**Notes to Physician** Treat symptomatically

## 5. Fire-fighting measures

**Suitable Extinguishing Media** Water spray. Carbon dioxide (CO<sub>2</sub>). Dry chemical. Chemical foam.

**Unsuitable Extinguishing Media** No information available

**Flash Point** No information available  
**Method -** No information available

**Autoignition Temperature** No information available

**Explosion Limits**

**Upper** No data available

**Lower** No data available

**Oxidizing Properties** Oxidizer

**Sensitivity to Mechanical Impact** No information available

**Sensitivity to Static Discharge** No information available

### Specific Hazards Arising from the Chemical

Oxidizer: Contact with combustible/organic material may cause fire. May ignite combustibles (wood, paper, oil, clothing, etc.). Thermal decomposition can lead to release of irritating gases and vapors.

### Hazardous Combustion Products

Nitrogen oxides (NO<sub>x</sub>).

### Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

### NFPA

**Health**  
2

**Flammability**  
0

**Instability**  
1

**Physical hazards**  
OX

## 6. Accidental release measures

**Personal Precautions** Use personal protective equipment as required. Ensure adequate ventilation. Avoid contact with skin and eyes.

**Environmental Precautions** Should not be released into the environment.

**Methods for Containment and Clean Up** Sweep up and shovel into suitable containers for disposal. Do not let this chemical enter the environment. Avoid dust formation.

## 7. Handling and storage

**Handling** Avoid contact with skin and eyes. Do not breathe dust. Do not breathe mist/vapors/spray. Do not ingest. If swallowed then seek immediate medical assistance. Keep away from clothing and other combustible materials.

**Storage.** Keep containers tightly closed in a dry, cool and well-ventilated place. Do not store near combustible materials. Incompatible Materials. Strong acids. Reducing Agent. Finely powdered metals. Strong reducing agents. Combustible material.

## 8. Exposure controls / personal protection

**Exposure Guidelines** This product does not contain any hazardous materials with occupational exposure

limits established by the region specific regulatory bodies.

### Engineering Measures

Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.

Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source

### Personal protective equipment

#### Eye Protection

Goggles

#### Hand Protection

Protective gloves

| Glove material | Breakthrough time | Glove thickness | Glove comments         |
|----------------|-------------------|-----------------|------------------------|
| Natural rubber | See manufacturers | -               | Splash protection only |
| Nitrile rubber | recommendations   |                 |                        |
| Neoprene       |                   |                 |                        |
| PVC            |                   |                 |                        |

Inspect gloves before use. observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information) gloves are suitable for the task: Chemical compatibility, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion. gloves with care avoiding skin contamination.

### Respiratory Protection

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly

**Recommended Filter type:** Particulates filter conforming to EN 143

When RPE is used a face piece Fit Test should be conducted

### Environmental exposure controls

No information available.

### Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice. Keep away from food, drink and animal feeding stuffs. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wash hands before breaks and after work.

## 9. Physical and chemical properties

|                                  |                          |
|----------------------------------|--------------------------|
| Physical State                   | Solid                    |
| Appearance                       | White                    |
| Odor                             | Odorless                 |
| Odor Threshold                   | No information available |
| pH                               | No information available |
| Melting Point/Range              | 30 °C / 86 °F            |
| Boiling Point/Range              | 80 °C / 176 °F           |
| Flash Point                      | No information available |
| Evaporation Rate                 | Not applicable           |
| Flammability (solid,gas)         | No information available |
| Flammability or explosive limits |                          |
| Upper                            | No data available        |
| Lower                            | No data available        |
| Vapor Pressure                   | No information available |
| Vapor Density                    | Not applicable           |

|  |                          |
|--|--------------------------|
| Specific Gravity                       | 2.83                     |
| Solubility                             | No information available |
| Partition coefficient; n-octanol/water | No data available        |
| Autoignition Temperature               | No information available |
| Decomposition Temperature              | No information available |
| Viscosity                              | Not applicable           |
| Molecular Formula                      | Bi N3 O9 . 5 H2 O        |
| Molecular Weight                       | 485.07                   |

## 10. Stability and reactivity

|                                  |  |
|----------------------------------|--|
| Reactive Hazard                  | No   |
| Stability                        | Hygroscopic. Oxidizer: Contact with combustible/organic material may cause fire.                             |
| Conditions to Avoid              | Exposure to light. Incompatible products. Exposure to moist air or water. Combustible material. Excess heat. |
| Incompatible Materials           | Strong acids, Reducing Agent, Finely powdered metals, Strong reducing agents, Combustible material           |
| Hazardous Decomposition Products | Nitrogen oxides (NOx)  |
| Hazardous Polymerization         | Hazardous polymerization does not occur.   |
| Hazardous Reactions              | None under normal processing.  |

## 11. Toxicological information

### Acute Toxicity

#### Product Information Component Information

| Component                         | LD50 Oral                 | LD50 Dermal | LC50 Inhalation |
|-----------------------------------|---------------------------|-------------|-----------------|
| Bismuth(III) nitrate pentahydrate | LD50 = 4042 mg/kg ( Rat ) | Not listed  | Not listed      |

**Toxicologically Synergistic Products** No information available

#### Delayed and immediate effects as well as chronic effects from short and long-term exposure

|                 |  |
|-----------------|--|
| Irritation      | Irritating to eyes, respiratory system and skin  |
| Sensitization   | No information available   |
| Carcinogenicity | The table below indicates whether each agency has listed any ingredient as a carcinogen. |

| Component                         | CAS-No     | IARC       | NTP        | ACGIH      | OSHA       | Mexico     |
|-----------------------------------|------------|------------|------------|------------|------------|------------|
| Bismuth(III) nitrate pentahydrate | 10035-06-0 | Not listed | Not listed | Not listed | Not listed | Not listed |
| Nitric acid, bismuth(3+) salt     | 10361-44-1 | Not listed | Not listed | Not listed | Not listed | Not listed |

**Mutagenic Effects** No information available

**Reproductive Effects** No information available.

**Developmental Effects** No information available.

**Teratogenicity** No information available.

**STOT - single exposure** Respiratory system

**STOT - repeated exposure** Kidney

|   |  |
|---|--|
| <b>Aspiration hazard</b>                          | No information available                                       |
| <b>Symptoms / effects, both acute and delayed</b> | May cause methemoglobinemia                                    |
| <b>Endocrine Disruptor Information</b>            | No information available                                       |
| <b>Other Adverse Effects</b>                      | The toxicological properties have not been fully investigated. |

## 12. Ecological information

### Ecotoxicity

Do not empty into drains. .

|                                      |   |
|--------------------------------------|---|
| <b>Persistence and Degradability</b> | Persistence is unlikely based on information available.         |
| <b>Bioaccumulation/ Accumulation</b> | No information available.                                       |
| <b>Mobility</b>                      | Will likely be mobile in the environment due to its volatility. |

## 13. Disposal considerations

|                               |   |
|-------------------------------|---|
| <b>Waste Disposal Methods</b> | Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification. |
|-------------------------------|---|

## 14. Transport information

### DOT

|                             |                             |
|-----------------------------|-----------------------------|
| <b>UN-No</b>                | UN1477                      |
| <b>Proper Shipping Name</b> | NITRATES, INORGANIC, N.O.S. |
| <b>Hazard Class</b>         | 5.1                         |
| <b>Packing Group</b>        | II                          |

### TDG

|                             |                             |
|-----------------------------|-----------------------------|
| <b>UN-No</b>                | UN1477                      |
| <b>Proper Shipping Name</b> | NITRATES, INORGANIC, N.O.S. |
| <b>Hazard Class</b>         | 5.1                         |
| <b>Packing Group</b>        | II                          |

### IATA

|                             |                             |
|-----------------------------|-----------------------------|
| <b>UN-No</b>                | UN1477                      |
| <b>Proper Shipping Name</b> | NITRATES, INORGANIC, N.O.S. |
| <b>Hazard Class</b>         | 5.1                         |
| <b>Packing Group</b>        | II                          |

### IMDG/IMO

|                             |                             |
|-----------------------------|-----------------------------|
| <b>UN-No</b>                | UN1477                      |
| <b>Proper Shipping Name</b> | NITRATES, INORGANIC, N.O.S. |
| <b>Hazard Class</b>         | 5.1                         |
| <b>Packing Group</b>        | II                          |

## 15. Regulatory information

### International Inventories

| Component                         | CAS-No     | DSL | NDSL | TSCA | TSCA Inventory notification - Active-Inactive | EINECS    | ELINCS | NLP |
|-----------------------------------|------------|-----|------|------|---|-----------|--------|-----|
| Bismuth(III) nitrate pentahydrate | 10035-06-0 | -   | -    | -    | -   | -         | -      | -   |
| Nitric acid, bismuth(3+) salt     | 10361-44-1 | X   | -    | X    | ACTIVE  | 233-791-8 | -      | -   |

| Component                         | CAS-No     | IECSC | KECL | ENCS | ISHL | TCSI | AICS | NZIoC | PICCS |
|-----------------------------------|------------|-------|------|------|------|------|------|-------|-------|
| Bismuth(III) nitrate pentahydrate | 10035-06-0 | X     | -    | -    | -    | X    | X    | X     | X     |

|                               |            |   |          |   |   |   |   |   |   |
|-------------------------------|------------|---|----------|---|---|---|---|---|---|
| Nitric acid, bismuth(3+) salt | 10361-44-1 | X | KE-03368 | X | X | X | X | X | X |
|-------------------------------|------------|---|----------|---|---|---|---|---|---|

**Legend:**

X - Listed '-' - Not Listed

KECL - NIER number or KE number (<http://ncis.nier.go.kr/en/main.do>)

DSL/NDL - Canadian Domestic Substances List/Non-Domestic Substances List

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

IECSC - Chinese Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

ENCS - Japanese Existing and New Chemical Substances

AICS - Australian Inventory of Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

**Canada**

SDS in compliance with provisions of information as set out in Canadian Standard - Part 4, Schedule 1 and 2 of the Hazardous Products Regulations (HPR) and meets the requirements of the HPR (Paragraph 13(1)(a) of the Hazardous Products Act (HPA)).

**Other International Regulations****Authorisation/Restrictions according to EU REACH****Safety, health and environmental regulations/legislation specific for the substance or mixture**

| Component                         | CAS-No     | OECD HPV       | Persistent Organic Pollutant | Ozone Depletion Potential | Restriction of Hazardous Substances (RoHS) |
|-----------------------------------|------------|----------------|------------------------------|---------------------------|--|
| Bismuth(III) nitrate pentahydrate | 10035-06-0 | Not applicable | Not applicable               | Not applicable            | Not applicable                             |
| Nitric acid, bismuth(3+) salt     | 10361-44-1 | Not applicable | Not applicable               | Not applicable            | Not applicable                             |

| Component                         | CAS-No     | Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification | Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements | Rotterdam Convention (PIC) | Basel Convention (Hazardous Waste) |
|-----------------------------------|------------|---|--|----------------------------|------------------------------------|
| Bismuth(III) nitrate pentahydrate | 10035-06-0 | Not applicable  | Not applicable   | Not applicable             | Not applicable                     |
| Nitric acid, bismuth(3+) salt     | 10361-44-1 | Not applicable  | Not applicable   | Not applicable             | Not applicable                     |

## 16. Other information

**Prepared By**

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**Revision Summary**

This document has been updated to comply with the requirements of WHMIS 2015 to align with the Globally Harmonised System (GHS) for the Classification and Labelling of Chemicals.

**Disclaimer**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

**End of SDS**