

SECTION 1: Identification

1.1. Identification

Product form : Mixtures
Product name : Bismuth AA Standard, 1000ppm (1mL = 1mg Bi)
Product code : LC11670

1.2. Recommended use and restrictions on use

Use of the substance/mixture : For laboratory and manufacturing use only.
Recommended use : Laboratory chemicals
Restrictions on use : Not for food, drug or household use

1.3. Supplier

LabChem, Inc.
1010 Jackson's Pointe Ct.
Zelienople, PA 16063 - USA
T 412-826-5230 - F 724-473-0647
info@labchem.com - www.labchem.com

1.4. Emergency telephone number

Emergency number : CHEMTREC: 1-800-424-9300 or +1-703-741-5970

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS US classification

Corrosive to metals Category 1	H290	May be corrosive to metals
Skin corrosion/irritation Category 1B	H314	Causes severe skin burns and eye damage
Serious eye damage/eye irritation Category 1	H318	Causes serious eye damage
Full text of H statements : see section 16		

2.2. GHS Label elements, including precautionary statements

GHS US labeling

Hazard pictograms (GHS US)



Signal word (GHS US)

: Danger

Hazard statements (GHS US)

: H290 - May be corrosive to metals
H314 - Causes severe skin burns and eye damage

Precautionary statements (GHS US)

: P234 - Keep only in original container.
P260 - Do not breathe mist, vapors, spray.
P264 - Wash exposed skin thoroughly after handling.
P280 - Wear protective gloves, protective clothing, eye protection, face protection.
P301+P330+P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

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P310 - Immediately call a poison center or doctor/physician.
P363 - Wash contaminated clothing before reuse.
P390 - Absorb spillage to prevent material-damage.
P405 - Store locked up.
P406 - Store in corrosive resistant container with a resistant inner liner.
P501 - Dispose of contents/container to comply with local, state and federal regulations.

2.3. Other hazards which do not result in classification

Other hazards not contributing to the classification : None under normal conditions.

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	GHS US classification
Water	CAS-No.: 7732-18-5	95.92	Not classified
Nitric Acid, 70% w/w	CAS-No.: 7697-37-2	3.85	Ox. Liq. 3, H272 Met. Corr. 1, H290 Skin Corr. 1A, H314 Eye Dam. 1, H318
Bismuth (III) Nitrate, Pentahydrate	CAS-No.: 10035-06-0	0.23	Ox. Sol. 2, H272 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 STOT SE 3, H335

Full text of hazard classes and H-statements : see section 16

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

First-aid measures after inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a poison center or doctor/physician.

First-aid measures after skin contact : Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Immediately call a poison center or doctor/physician.

First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center or doctor/physician.

First-aid measures after ingestion : Rinse mouth. Do NOT induce vomiting. Immediately call a poison center or doctor/physician.

4.2. Most important symptoms and effects (acute and delayed)

Potential Adverse human health effects and symptoms : Based on available data, the classification criteria are not met.

Symptoms/effects : Causes severe skin burns and eye damage.

Symptoms/effects after inhalation : Irritation of the nasal mucous membranes. Irritation of the respiratory tract.

Symptoms/effects after skin contact : Caustic burns/corrosion of the skin.

Symptoms/effects after eye contact : Causes serious eye damage.

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Symptoms/effects after ingestion : Burns.

4.3. Immediate medical attention and special treatment, if necessary

Obtain medical assistance. Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : Foam. Dry powder. Carbon dioxide. Water spray. Sand.
Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Specific hazards arising from the chemical

No additional information available

5.3. Special protective equipment and precautions for fire-fighters

Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.
Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Protective equipment : Safety glasses. Protective clothing. Gloves. Face-shield.
Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment : Equip cleanup crew with proper protection.
Emergency procedures : Ventilate area.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor. Do not breathe mist, vapors, spray.
Hygiene measures : Wash exposed skin thoroughly after handling. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Comply with applicable regulations.

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Storage conditions	: Keep container closed when not in use.
Incompatible products	: Strong bases.
Incompatible materials	: Sources of ignition. Direct sunlight.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Bismuth AA Standard, 1000ppm (1mL = 1mg Bi)

No additional information available

Bismuth (III) Nitrate, Pentahydrate (10035-06-0)

No additional information available

Nitric Acid, 70% w/w (7697-37-2)

USA - ACGIH - Occupational Exposure Limits

ACGIH OEL TWA [ppm]	2 ppm (Nitric acid; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value)
ACGIH STEL (ppm)	4 ppm (Nitric acid; USA; Short time value; TLV - Adopted Value)

USA - OSHA - Occupational Exposure Limits

OSHA PEL (TWA) [1]	5 mg/m ³
OSHA PEL (TWA) [2]	2 ppm

USA - IDLH - Occupational Exposure Limits

IDLH [ppm]	25 ppm
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USA - NIOSH - Occupational Exposure Limits

NIOSH REL (TWA)	5 mg/m ³
NIOSH REL TWA [ppm]	2 ppm
NIOSH REL (STEL)	10 mg/m ³
NIOSH REL STEL [ppm]	4 ppm

Water (7732-18-5)

No additional information available

8.2. Appropriate engineering controls

Appropriate engineering controls	: Emergency eye wash fountains should be available in the immediate vicinity of any potential exposure.
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8.3. Individual protection measures/Personal protective equipment

Personal protective equipment:

Safety glasses. Gloves. Chemical resistant apron. Face shield.

Hand protection:

Wear protective gloves.

Eye protection:

Chemical goggles or face shield

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Skin and body protection:

Wear suitable protective clothing

Respiratory protection:

Respiratory protection not required in normal conditions

Personal protective equipment symbol(s):



Other information:

Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Color	: Colorless
Odor	: None.
Odor threshold	: No data available
pH	: No data available
Melting point	: No data available
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: Non flammable.
Vapor pressure	: No data available
Relative vapor density at 20 °C	: No data available
Relative density	: No data available
Density	: 1.02 g/ml
Solubility	: Soluble in water.
Log Pow	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity, kinematic	: 0.99 mm ² /s
Viscosity, dynamic	: No data available
Explosion limits	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Thermal decomposition generates : Corrosive vapors.

10.2. Chemical stability

Discolours on exposure to light.

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10.3. Possibility of hazardous reactions

Not established.

10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures.

10.5. Incompatible materials

Strong bases.

10.6. Hazardous decomposition products

Nitrogen oxides. Thermal decomposition generates : Corrosive vapors.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral) : Not classified
Acute toxicity (dermal) : Not classified
Acute toxicity (inhalation) : Not classified

Bismuth (III) Nitrate, Pentahydrate (10035-06-0)

LD50 oral rat	3710 mg/kg
ATE US (oral)	3710 mg/kg body weight

Water (7732-18-5)

LD50 oral rat	≥ 90000 mg/kg
ATE US (oral)	90000 mg/kg body weight

Skin corrosion/irritation : Causes severe skin burns.
Serious eye damage/irritation : Causes serious eye damage.
Respiratory or skin sensitization : Not classified
Germ cell mutagenicity : Not classified
Carcinogenicity : Not classified
Reproductive toxicity : Not classified
STOT-single exposure : Not classified

Bismuth (III) Nitrate, Pentahydrate (10035-06-0)

STOT-single exposure	May cause respiratory irritation.
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STOT-repeated exposure : Not classified
Aspiration hazard : Not classified
Viscosity, kinematic : 0.99 mm²/s
Likely routes of exposure : Skin and eye contact.
Potential Adverse human health effects and symptoms : Based on available data, the classification criteria are not met.
Symptoms/effects : Causes severe skin burns and eye damage.
Symptoms/effects after inhalation : Irritation of the nasal mucous membranes. Irritation of the respiratory tract.
Symptoms/effects after skin contact : Caustic burns/corrosion of the skin.
Symptoms/effects after eye contact : Causes serious eye damage.
Symptoms/effects after ingestion : Burns.

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SECTION 12: Ecological information

12.1. Toxicity

Nitric Acid, 70% w/w (7697-37-2)

EC50 Daphnia 1	180 mg/l (EC50; 48 h)
LC50 fish 2	72 ppm (LC50; 96 h)
Threshold limit algae 1	> 19 mg/l (EC0)

12.2. Persistence and degradability

Bismuth AA Standard, 1000ppm (1mL = 1mg Bi)

Persistence and degradability	Not established.
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Bismuth (III) Nitrate, Pentahydrate (10035-06-0)

Persistence and degradability	Not established.
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Nitric Acid, 70% w/w (7697-37-2)

Persistence and degradability	Biodegradability: not applicable. No test data on mobility of the components available.
Biochemical oxygen demand (BOD)	Not applicable
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable

Water (7732-18-5)

Persistence and degradability	Not established.
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12.3. Bioaccumulative potential

Bismuth AA Standard, 1000ppm (1mL = 1mg Bi)

Bioaccumulative potential	Not established.
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Bismuth (III) Nitrate, Pentahydrate (10035-06-0)

Bioaccumulative potential	Not established.
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Nitric Acid, 70% w/w (7697-37-2)

BCF fish 1	≤ 1 (BCF)
Log Pow	-2.3 (OECD 107: Partition Coefficient (n-octanol/water): Shake Flask Method)
Bioaccumulative potential	Bioaccumulation: not applicable.

Water (7732-18-5)

Bioaccumulative potential	Not established.
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12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Other information : Avoid release to the environment.

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SECTION 13: Disposal considerations

13.1. Disposal methods

Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to comply with local, state and federal regulations.

Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

14.1. UN number

DOT NA No : UN2031

UN-No. (IMDG) : 2031

UN-No. (IATA) : 2031

14.2. UN proper shipping name

Proper Shipping Name (DOT) : Nitric acid other than

Proper Shipping Name (TDG) : NITRIC ACID

Proper Shipping Name (IMDG) : NITRIC ACID

Proper Shipping Name (IATA) : Nitric acid

14.3. Transport hazard class(es)

DOT

Transport hazard class(es) (DOT) : 8

Hazard labels (DOT) : 8

IMDG

Transport hazard class(es) (IMDG) : 8

Hazard labels (IMDG) : 8



IATA

Transport hazard class(es) (IATA) : 8

Hazard labels (IATA) : 8



14.4. Packing group

Packing group (DOT) : II

Packing group (IMDG) : II

Packing group (IATA) : II

14.5. Environmental hazards

Other information : No supplementary information available.

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14.6. Special precautions for user

DOT

UN-No.(DOT)	: UN2031
DOT Special Provisions (49 CFR 172.102)	: A6 - For combination packaging, if plastic inner packaging are used, they must be packed in tightly closed metal receptacles before packing in outer packaging. B2 - MC 300, MC 301, MC 302, MC 303, MC 305, and MC 306 and DOT 406 cargo tanks are not authorized. B47 - Each tank may have a reclosing pressure relief device having a start-to-discharge pressure setting of 310 kPa (45 psig). B53 - Packaging must be made of either aluminum or steel. IB2 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized. T8 - 4 178.274(d)(2) Normal..... Prohibited TP2 - a. The maximum degree of filling must not exceed the degree of filling determined by the following: (image) Where: tr is the maximum mean bulk temperature during transport, tf is the temperature in degrees celsius of the liquid during filling, and a is the mean coefficient of cubical expansion of the liquid between the mean temperature of the liquid during filling (tf) and the maximum mean bulk temperature during transportation (tr) both in degrees celsius. b. For liquids transported under ambient conditions may be calculated using the formula: (image) Where: d15 and d50 are the densities (in units of mass per unit volume) of the liquid at 15 C (59 F) and 50 C (122 F), respectively. TP12 - This material is considered highly corrosive to steel.
DOT Packaging Exceptions (49 CFR 173.xxx)	: None
DOT Packaging Non Bulk (49 CFR 173.xxx)	: 158
DOT Packaging Bulk (49 CFR 173.xxx)	: 242
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)	: 1 L
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)	: 30 L
DOT Vessel Stowage Location	: D - The material must be stowed "on deck only" on a cargo vessel and on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers or one passenger per each 3 m of overall vessel length, but the material is prohibited on passenger vessels in which the limiting number of passengers is exceeded.

IMDG

Limited quantities (IMDG)	: 1 L
Excepted quantities (IMDG)	: E2
Packing instructions (IMDG)	: P001
Packing provisions (IMDG)	: PP81
IBC packing instructions (IMDG)	: IBC02
IBC special provisions (IMDG)	: B15, B20
Tank instructions (IMDG)	: T8
Tank special provisions (IMDG)	: TP2
EmS-No. (Fire)	: F-A - FIRE SCHEDULE Alfa - GENERAL FIRE SCHEDULE
EmS-No. (Spillage)	: S-B - SPILLAGE SCHEDULE Bravo - CORROSIVE SUBSTANCES
Stowage category (IMDG)	: D
Properties and observations (IMDG)	: Colourless liquid.Oxidant; may cause fire in contact with organic materials such as wood, cotton or straw, evolving highly toxic gases (brown fumes). Highly corrosive to most metals. Causes severe burns to skin, eyes and mucous membranes.

IATA

PCA Excepted quantities (IATA)	: E2
PCA Limited quantities (IATA)	: Y840
PCA limited quantity max net quantity (IATA)	: 0.5L
PCA packing instructions (IATA)	: 851
PCA max net quantity (IATA)	: 1L
CAO packing instructions (IATA)	: 855

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CAO max net quantity (IATA) : 30L
ERG code (IATA) : 8L

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15: Regulatory information

15.1. US Federal regulations

Bismuth AA Standard, 1000ppm (1mL = 1mg Bi)

SARA Section 311/312 Hazard Classes	Physical hazard - Corrosive to metals Health hazard - Skin corrosion or Irritation Health hazard - Specific target organ toxicity (single or repeated exposure)
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All components of this product are present and listed as Active on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory, except for:

Bismuth (III) Nitrate, Pentahydrate	CAS-No. 10035-06-0	0.23%
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Chemical(s) subject to the reporting requirements of Section 313 or Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR Part 372.

Nitric Acid, 70% w/w	CAS-No. 7697-37-2	3.85%
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Bismuth (III) Nitrate, Pentahydrate (10035-06-0)

SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard Reactive hazard
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Nitric Acid, 70% w/w (7697-37-2)

RQ (Reportable quantity, section 304 of EPA's List of Lists)	1000 lb
RQ (Reportable quantity, section 304 of EPA's List of Lists)	1000 lb
SARA Section 302 Threshold Planning Quantity (TPQ)	1000 lb
SARA Section 311/312 Hazard Classes	Physical hazard - Oxidizer (liquid, solid or gas) Physical hazard - Corrosive to metals Health hazard - Skin corrosion or Irritation Health hazard - Serious eye damage or eye irritation

15.2. International regulations

CANADA

Bismuth (III) Nitrate, Pentahydrate (10035-06-0)

Not listed on the Canadian DSL (Domestic Substances List)

Water (7732-18-5)

Listed on the Canadian DSL (Domestic Substances List)

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EU-Regulations

No additional information available

National regulations

No additional information available

15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

SECTION 16: Other information

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Revision date : 10/28/2021

Other information : None.

Full text of H- and EUH-statements: see section 16

H272	May intensify fire; oxidizer
H290	May be corrosive to metals
H314	Causes severe skin burns and eye damage
H315	Causes skin irritation
H318	Causes serious eye damage
H319	Causes serious eye irritation
H335	May cause respiratory irritation

NFPA health hazard

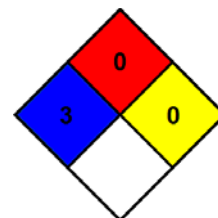
: 3 - Materials that, under emergency conditions, can cause serious or permanent injury.

NFPA fire hazard

: 0 - Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand.

NFPA reactivity

: 0 - Material that in themselves are normally stable, even under fire conditions.



Hazard Rating

Health : 3 Serious Hazard - Major injury likely unless prompt action is taken and medical treatment is given

Flammability : 0 Minimal Hazard - Materials that will not burn

Physical : 0 Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives.

Personal protection : D - Face shield and eye protection, Gloves, Synthetic apron

SDS US LabChem

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