SAFETY DATA SHEET

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SECTION 1. IDENTIFICATION

Product Identifier: (2N) 99% Bismuth Nitrate Solution

Product Code: BI-NAT-02-SOL

CAS Number: 10035-06-0

Relevant identified uses of the substance: Scientific research and development

Supplier details:

American Elements
10884 Weyburn Ave.
Los Angeles, CA 90024
Tel: +1 310-208-0551
Fax: +1 310-208-0351
Emergency telephone number:
+1 800-424-9300

SECTION 2. HAZARDS IDENTIFICATION

Classification
Physical Hazard: Not classified.
Health Hazard: Skin Corrosion/Irritation Category 1B
Serious Eye Damage/Eye Irritation Category 1
Label Elements
Symbol

Signal Word
DANGER
Hazard Statement(s)
H314 Causes severe skin burns and eye damage.
Precautionary Statement(s)
P260 Do not breathe fume, mists, vapors, spray.
P264 Wash hands thoroughly after handling.
P280 Wear protective gloves, protective clothing, eye protection.
P301 + P330 + P331 If swallowed: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353 If on skin (or hair): Remove immediately all contaminated clothing. Rinse skin with water.

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.
P310 Immediately call a doctor.
P363 Wash contaminated clothing before reuse.
P405 Store locked up.
P501 Dispose of contents and container according to local regulations.
Hazards Not Otherwise Classified: N/A.
Ingredients(s) with Unknown Acute Toxicity: N/A.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substances
CAS No. / Substance Name:
10035-06-0 Bismuth(III) nitrate
Identification number(s):
EC number:
233-791-8

SECTION 4. FIRST AID MEASURES

Description of First Aid Measures:
Inhalation:
If adverse effects occur, remove to uncontaminated area. If not breathing, give artificial respiration or oxygen by qualified personnel. Seek immediate medical attention.
Skin Contact:
Wash skin with soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get immediate medical attention. Thoroughly clean and dry contaminated clothing before reuse. Destroy contaminated shoes.
Eye Contact:
Immediately flush eyes, including under the eyelids with copious amounts of water for at least 15 minutes. Seek immediate medical attention.
Ingestion:
Contact a poison control center immediately for instructions. Do not induce vomiting. Give water to rinse out mouth. Never give liquids to a person with reduced awareness or becoming unconscious. If vomiting occurs, keep head lower than hips to prevent aspiration. If not breathing,
give artificial respiration by qualified personnel. Seek immediate medical attention.
Most Important Symptoms/Effects, Acute and Delayed:
Acid burns to skin, eyes, and lungs.
Indication of any immediate medical attention and special treatment needed, if necessary:
If any of the above symptoms are present, seek immediate medical attention.

SECTION 5. FIREFIGHTING MEASURES

Fire and Explosion Hazards:
Negligible fire hazard. See Section 9, “Physical and Chemical Properties” for flammability properties.
Extinguishing Media:
Suitable: Use extinguishing media appropriate to the surrounding fire.
Unsuitable: None listed.
Specific Hazards Arising from the Chemical:

Thermal decomposition will form oxides of nitrogen and bismuth.
Special Protective Equipment and Precautions for Fire-Fighters:
Avoid inhalation of material or combustion byproducts. Wear full protective clothing and NIOSH approved self-contained breathing apparatus (SCBA).
NFPA Ratings
(0 = Minimal; 1 = Slight; 2 = Moderate; 3 = Serious; 4 = Severe)
Health = 3 Fire = 0 Reactivity = 0

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures:
Immediately contact emergency personnel. Keep unnecessary personnel away. Use suitable protective equipment; see Section 8, “Exposure Controls and Personal Protection”.
Methods and Materials for Containment and Clean up:
Do not touch spilled material. Notify safety personnel of spills. Absorb with sand or other non-combustible material. Collect spilled material in appropriate container for disposal. Isolate hazard area and deny entry.

SECTION 7. HANDLING AND STORAGE

Safe Handling Precautions:
See Section 8, “Exposure Controls and Personal Protection”.
Storage:
Store and handling in accordance with all current regulations and standards. Keep separated from incompatible substances (See Section 10 “Stability and Reactivity”).

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Limits:
Component: Bismuth nitrate
No occupational limits established.
Engineering Controls:
Provide local exhaust or process enclosure ventilation system. Ensure compliance with applicable exposure limits.
Personal Protection:
In accordance with OSHA 29 CFR 1910.132, subpart I, wear appropriate Personal Protective Equipment (PPE) to minimize exposure to this material.
Respiratory Protection:
If workplace conditions warrant a respirator, a respiratory protection program that meets OSHA 29CFR 1910.134 must be followed. Refer to NIOSH 42 CFR 84 for applicable certified respirators.
Eye/Face Protection:
Wear splash resistant safety goggles with a face shield. An eyewash station should be readily available near areas of use.
Skin and Body Protection:
Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Chemical-resistant gloves should be worn at all times when handling chemicals.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties
Appearance:
Form: Colorless to yellow liquid
Odor: Irritating odor
Odor threshold: No data available.
pH: N/A.
Melting point/range: No data available.
Boiling point/range: No data available.
Sublimation temperature / start: No data available.
Flammability (solid, gas):
No data available.
Ignition temperature: No data available.
Decomposition temperature: No data available.
Auto igniting: No data available.
Danger of explosion: No data available.
Explosion limits:
Lower: No data available.
Upper: No data available.
Vapor pressure: N/A.
Density at 20 °C (68 °F): No data available.
Relative density
No data available.
Vapor density
N/A.
Evaporation rate
N/A.
Partition coefficient (n-octanol/water): No data available.
Viscosity:
Dynamic: N/A.
Kinematic: N/A.
Other information
No information available.

SECTION 10. STABILITY AND REACTIVITY

Reactivity: Stable at normal temperatures and pressure.
Stability: Stable
Possible Hazardous Reactions: None listed.
Conditions to Avoid: Contact with combustible or incompatible materials.
Incompatible Materials: Acids, combustible materials, halo carbons, amines, bases, oxidizing materials, metals, halogens, metal salts, metal oxides, reducing agents, peroxides, metal carbide, cyanides.
Fire/Explosion Information: See Section 5, “Fire Fighting Measures”.
Hazardous Decomposition: Thermal decomposition will produce oxides of nitrogen and bismuth.
Hazardous Polymerization: Will Not Occur

SECTION 11. TOXICOLOGICAL INFORMATION

Route of Exposure:
Inhalation,Skin, Ingestion
Symptoms Related to the Physical, Chemical and Toxicological Characteristics:
Burning pain and severe skin corrosion and eye damage.
Potential Health Effects (Acute, Chronic and Delayed):
Inhalation:
Inhalation of nitric acid can damage the mucous membranes and upper respiratory tract. Short term exposure may cause irritation and inflammation of the upper respiratory tract, coughing, choking, sore throat, shortness of breath, headache, dizziness, and nausea. Long term exposure to acid fumes may cause damage to teeth, bronchial irritation, chronic cough, bronchial pneumonia, and gastrointestinal disturbances. No data
available for bismuth nitrate.
Skin Contact:
Nitric acid can cause severe skin burns. Severity of the damage depends on the concentration and duration of exposure. Effects of acid burns may be delayed. No data available for bismuth nitrate.
Eye Contact:
Nitric acid compounds can cause severe eye irritation, corneal burns, permanent eye damage, or blindness. Severity of the damage depends on the concentration and duration of exposure. No data available for bismuth nitrate.
Ingestion:
Ingestion of this material is unlikely under normal conditions of use. If ingested, nitric acid can cause severe burns and damage to the gastrointestinal tract. Chronic ingestion of bismuth compounds may cause decreased appetite, colic, nausea, vomiting, diarrhea, ulcera
tive stomatitis, foul breath, salivation, gingivitis, a blue-gray bismuth line on the gums or a diffuse or patchy bluish color of the mucosa, weakness, rheumatic pain, fever, headache and skin rashes or lesions followed by exfoliative dermatitis.
Numerical Measures of Toxicity:
Acute Toxicity:
Not classified.
Nitric acid, Rat, Inhalation LC50: 130 mg/m
3
(4 h)
Bismuth nitrate, Rat, Oral LD50: 4 g/kg.
Skin Corrosion/Irritation:
This SRM contains >1 % of nitric acid and it is classified as Category 1B.
Serious Eye damage/Eye irritation:
This SRM contains >1 % nitric acid and it is classified as Category 1.
Respiratory Sensitization: No data available.
Skin Sensitization: Not classified.
Germ Cell Mutagenicity: No data available.
Carcinogenicity: Not classified.
Listed as a Carcinogen/Potential Carcinogen
No
Nitric acid is not listed by NTP, IARC or OSHA as a carcinogen.
Bismuth nitrate is not listed by NTP, IARC or OSHA as a carcinogen.
Reproductive Toxicity: Not classified.
Nitric acid, Rat, Oral TDLo: 21 150 mg/kg (pregnant 1 d to 21 d)
Nitric acid, Rat, Oral TDLo: 2345 mg/kg (pregnant 18 d)
Bismuth Nitrate: Rat, Intratesticular TDLo: 31 601 μg/kg (1 d)
Specific Target Organ Toxicity, Single Exposure: Not classified.
Specific Target Organ Toxicity, Repeated Exposure: Not classified.
Aspiration Hazard: No data available.

SECTION 12. ECOLOGICAL INFORMATION

Toxicity
Aquatic toxicity:
No information available.
Persistence and degradability:
No information available.
Bioaccumulative potential:
No information available.
Mobility in soil:
No information available.
Additional ecological information:
General notes:
Do not allow material to be released to the environment without official permits.
Do not allow undiluted product or large quantities to reach ground water, water course or sewage system.
Avoid transfer into the environment.
Results of PBT and vPvB assessment:
PBT:
N/A.
vPvB:
N/A.
Other adverse effects
No information available.

SECTION 13. DISPOSAL CONSIDERATIONS

Waste treatment methods
Recommendation:
Consult state, local or national regulations to ensure proper disposal.
Uncleaned packagings:
Recommendation:
Disposal must be made according to official regulations.

SECTION 14. TRANSPORT INFORMATION

U.S. DOT and IATA:
UN3264, Corrosive liquid, acidic, inorganic, n.o.s. (Bismuth nitrate), 8, II

SECTION 15. REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture
National regulations
All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.
All components of this product are listed on the Canadian Domestic Substances List (DSL).
SARA Section 313 (specific toxic chemical listings)
Substance is not listed.

California Proposition 65
Prop 65 - Chemicals known to cause cancer
Substance is not listed.
Prop 65 - Developmental toxicity
Substance is not listed.
Prop 65 - Developmental toxicity, female
Substance is not listed.
Prop 65 - Developmental toxicity, male
Substance is not listed.
Information about limitation of use:
For use only by technically qualified individuals.
Other regulations, limitations and prohibitive regulations
Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006.
Substance is not listed.
The conditions of restrictions according to Article 67 and Annex XVII of the Regulation (EC) No 1907/2006 (REACH) for the manufacturing, placing on the market and use must be observed.
Substance is not listed.
Annex XIV of the REACH Regulations (requiring Authorisation for use)
Substance is not listed.
REACH - Pre-registered substances
Substance is listed.
Chemical safety assessment:
A Chemical Safety Assessment has not been carried out.

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16. OTHER INFORMATION

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH). The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. American Elements 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.