

Section 1. Product and Company Identification

Product Identification: ANALCS
 MSDS Number: ANALCS
 Recommended Use: For Laboratory Use.
 Company Identification: High-Purity Standards
 P.O. Box 41727
 Charleston, SC 29423
 Telephone: (843) 767-7900
 FAX: (843) 767-7906

In case of emergency call INFOTRAC: 800-535-5053

Section 2. Hazard Identification

Classification:

Skin Corrosion/Irritation, Category 1B
 Serious Eye Damage/ Eye Irritation, Category 1

Labeling:**Symbol:**

Signal Word: Danger.

Hazard Statement: Causes severe skin burns and eye damage. Causes serious eye damage. Suspected of causing cancer.

Precautionary Statement: Wear protective gloves/clothing and eye/face protection. Wash thoroughly after handling.

Section 3. Composition

Component	CAS/EINECS Registry #	Percent Concentration
Barium Carbonate (BaCO ₃)	513-77-9/208-167-3	0.005 (as Ba)
Barium Nitrate (Ba(NO ₃) ₂)	10022-31-8/233-020-5	
Beryllium Acetate (Be ₄ O(C ₂ H ₃ O ₂) ₆)	19049-40-2/242-785-4	0.005 (as Be)
Cadmium	7440-43-9/231-152-8	0.01
Chromium	7440-47-3/231-157-5	0.005
Cobalt	7440-48-4/231-158-0	0.005
Copper	7440-50-8/231-159-6	0.005
Lead	7439-92-1/231-100-4	0.01
Manganese Acetate Tetrahydrate (Mn(CH ₃ CO ₂) ₂)*4H ₂ O	6156-78-1/211-334-3	0.1 (as Mn)
Nickel	7440-02-0/231-111-4	0.01
Silver	7440-22-4/231-131-3	0.01
Ammonium Metavanadate (NH ₄ VO ₃)	7803-55-6/232-261-3	0.005 (as V)
Zinc	7440-66-6/231-175-3	0.01

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Nitric Acid (HNO ₃)	7697-37-2/231-714-2	2
Water, deionized	7732-18-5/231-791-2	Balance

**Note: Barium is derived from either Barium carbonate or Barium Nitrate. For this reason both sources are listed on the SDS. Refer to the product's Certificate of Analysis to determine which source was used in the production of the lot number received.*

Section 4. First Aid Measures

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse. Call a physician if irritation develops. Liquid may cause burns to skin and eyes.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Call a physician. May cause nausea, vomiting, and diarrhea.

IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.

IF exposed or concerned: Get medical attention.

Target Organs: Eyes, skin.

Section 5. Fire Fighting Measures

Fire & Explosion hazards: While nitric acid is not combustible, it is a strong oxidizing agent that can react with combustible materials; however, it is present in limited quantities in this solution. NO_x compounds can be released in case of fire.

Extinguishing Media: Use any extinguishing media that is suitable for the surrounding area. Use a water spray to dilute nitric acid and to absorb liberated nitrogen oxides.

Specific Methods: Firefighters should wear proper protective equipment and self-contained breathing apparatus with full face piece operated in positive pressure mode.

Section 6. Accidental Release Measures

Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Do not allow to enter drainage systems or water ways. Dike area and dilute spill with water and neutralize with soda ash, limestone, etc. Place the neutralized material into containers suitable for eventual disposal, reclamation, or destruction. Always dispose of in accordance with local regulations.

Section 7. Handling and Storage

Store in a cool, dry, ventilated storage area with acid resistant floors and good drainage. Keep out of direct sunlight and away from heat, water, and incompatible materials. When diluting, the acid should always be added slowly to water and in small amounts. Refer to Section 8 for personal handling instructions.

Section 8. Exposure Controls and Personal Protection

Engineering Controls: Provide exhaust ventilation or other engineering controls to keep any buildup of airborne contaminants below their respective threshold limit value. Ensure the availability of eyewash stations and safety showers.

Personal Protection: Wear proper gloves, safety glasses with side shields, lab coat/apron.

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Exposure Limits:

Component	ACGIH TLV	OSHA PEL
Barium	0.5 mg/m ³	0.5 mg/m ³
Beryllium Acetate	0.002 mg/m ³	0.002 mg/m ³
Cadmium	0.002 mg/m ³ (respirable particulate)	0.005 mg/m ³
Chromium	0.5 mg/m ³	1 mg/m ³
Cobalt	0.02 mg/m ³	0.1 mg/m ³
Copper	0.2 mg/m ³ (fumes)	0.1 mg/m ³ (fumes)
Lead	0.05 mg/m ³	0.05 mg/m ³
Manganese Acetate Tetrahydrate	0.2 mg/m ³	C 5 mg/m ³
Nickel	1.5 mg/m ³	1 mg/m ³
Silver	0.1 mg/m ³	Not Available
Ammonium Metavanadate	0.05 mg/m ³	Not Available
Zinc	5 mg/m ³	1 mg/m ³
Nitric Acid	2 mg/kg	5 mg/m ³

Section 9. Physical and Chemical Properties

Physical State: Liquid
 Color: Clear, gray
 Odor: Odorless to a faint pungent odor
 Odor threshold: None
 pH: <2
 Melting point: N/A
 Freezing Point: N/A
 Boiling Point: Approximately 100°C
 Flash point: N/A
 Evaporation rate: N/A
 Flammability: N/A
 Explosion limits: N/A
 Vapor Pressure (mm): N/A
 Vapor Density (air+1): N/A
 Relative density: (H₂O = 1): Approximately 1.0
 Solubility in H₂O: Complete
 Auto ignition temperature: N/A
 Decomposition temperature: N/A
 Molecular Weight: N/A

Section 10. Stability and Reactivity

Stability Indicator: Decomposes slowly to release oxygen.
 Conditions to Avoid: Metals, chlorine, organic materials, strong alkali, cyanides.
 Incompatibles: Strong reducing agents.
 Hazardous Decomposition Products: NO_x compounds including nitric oxide (NO), nitrogen dioxide (NO₂), nitrous oxide (N₂O) and nitric acid mist or vapor.
 Hazardous Polymerization: Will not occur.

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Section 11. Toxicological Information

May affect skin, mucous membranes and eyes. Swallowing may lead to a negative effect on mouth and throat and to the risk of perforation or the corrosion of esophagus and stomach.

Beryllium, Cadmium, Lead, and Nickel are known or investigated as possible carcinogenic substances.

RTECS#

HNO₃: QU5775000

BaCO₃: CQ8600000 Ba(NO₃)₂- CQ9625000 Be: DS1750000

Cd: EU9800000 Cr: GB4200000 Co: GF8750000

Cu: GL5325000 Pb: OF7525000 Mn: AI5775000

Ni: QR5950000 Ag: VW3500000 V: YW0875000

Zn: ZG8600000

Toxicity Data:

LD_{LO} Oral, Human: (Nitric Acid) 430 mg/kg

LD_{LO} Oral, Human: (Barium Carbonate) 17 mg/kg

LD₅₀ Oral, Rat: (Ba(NO₃)₂) 355 mg/kg.

TD_{LO} Intratracheal, Rat: (Beryllium Acetate) 13 mg/kg

LD_{LO} Oral, Human: (Cadmium) 2330 mg/kg

LD₅₀ Unreported Route, Rat: (Chromium) 27.5 mg/kg

LD_{LO} Oral, Rabbit: (Cobalt) 750 mg/kg

TD_{LO} Oral, Human: (Copper) 120 µg/kg

TD₅₀ Oral, Woman: (Lead) 450 mg/kg/6 year

LD₅₀ Oral, Rat: (Manganese Acetate) 3730mg/kg

LD₅₀, Intravenous, Mouse: (Nickel) 50 mg/kg

TD_{LO} Implant, Mouse: (Silver) 11 g/kg

LD₅₀; LD₅₀ Oral, Rat: (Ammonium Metavanadate) 58,100 µg/kg

LD_{LO} Oral, Duck: (Zinc) 388 mg/kg

Section 12. Ecological Information

Ecotoxicological information: Do not allow material to reach ground water, water bodies, or sewage system. High concentrations of zinc have been shown to be detrimental to aquatic life. Beryllium and its compounds are considered to have high acute and chronic toxicity to aquatic life. Beryllium is more toxic in soft water than in hard water.

Section 13. Disposal Considerations

General: Follow Federal, state and local regulations for waste.

Section 14. Transport Information

D.O.T. Classification: Hazardous by IATA and 49CFR regulations (based on concentration of acid).

D.O.T. Shipping Name: Corrosive liquid, Acidic, Inorganic, n.o.s. (Nitric Acid Solution)

D.O.T. Hazard Class: 8

U.N./N.A. Number: 3264

Packing Group: II

D.O.T. Label: Corrosive (8)

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Section 15. Regulations (Not meant to be all inclusive-selected regulation listed)

OSHA Status: These items meet the OSHA Hazard Communication Standard (29 CFR 1910.1200) definition of a hazardous material.

TSCA Status: Components of this solution are listed on the TSCA Inventory.

RCRA Status: Yes; (Ammonium Metavanadate-P119)

SARA: Subject to the reporting requirements of Section 313 or SARA Title III and of 40 CFR 372

Risk Phrases: R20/21/22. R24/25. R34. R45. R48. Harmful by inhalation. Toxic by skin contact or ingestion. Cause burns. May cause cancer. Danger of serious damage to health by prolonged exposure.

Safety Phrases: S36/37/39, S53 Wear suitable protective clothing, gloves and eye/face protection; Avoid exposure- obtain special instruction before use.

WHMIS Information (Canada): E: Corrosive

Section 16. Other Information

HPS products are intended for laboratory use only. All products should be handled and used by trained professional personnel only. The responsibility for the safe handling and use of these products rests solely with the buyer and/or user. The SDS was prepared carefully and represents the best data currently available to us; however, HPS does not certify the data on the SDS. Certified values for this material are given only on the Certificate of Analysis.

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