

## Section 1. Product and Company Identification

Product Identification: ICP-200.7-2  
 MSDS Number: ICP-200.7-2  
 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 1

Serious Eye Damage/ Eye Irritation, Category 1

**Labeling:****Symbol:**

**Signal Word:** Danger.

**Hazard Statement:** Causes severe skin burns and eye damage.

**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 ( $\text{BaCO}_3$ )	513-77-9/208-167-3	0.01 (as Ba)
Barium Nitrate ( $\text{Ba}(\text{NO}_3)_2$ )	10022-31-8/233-020-5	
Beryllium Acetate ( $\text{Be}_4\text{O}(\text{C}_2\text{H}_3\text{O}_2)_6$ )	19049-40-2/242-785-4	0.01 (as Be)
Cobalt	7440-48-4/231-158-0	0.02
Copper	7440-50-8/231-159-6	0.01
Iron	7439-89-6/231-096-4	0.1
Manganese Acetate Tetrahydrate ( $\text{Mn}(\text{CH}_3\text{CO}_2)_2 \cdot 4\text{H}_2\text{O}$ )	6156-78-1/211-334-3	0.01 (as Mn)
Strontium Nitrate ( $\text{Sr}(\text{NO}_3)_2$ )	10042-76-9/233-131-9	0.1 (as Sr)
Ammonium Metavanadate ( $\text{NH}_4\text{VO}_3$ )	7803-55-6/232-261-3	0.01 (as V)
Nitric Acid	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.*

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#### Section 4. First Aid Measures

**IF ON SKIN (or hair):** Remove/Take off immediately all contaminated clothing. Gently wash with plenty of soap and water.

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

**IF SWALLOWED:** Rinse mouth. Immediately call a POISON CENTER or doctor/physician.

**IF INHALED:** Remove to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/physician.

**Target Organs:** Eyes, skin, respiratory system, teeth, and skeletal system.

#### 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<sub>x</sub> compounds can be released in case of fire. Hydrofluoric acid may ignite or explode on contact with combustible materials.

**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.

##### Exposure Limits:

Component	ACGIH TLV	OSHA PEL
Barium	0.5 mg/m <sup>3</sup>	0.5 mg/m <sup>3</sup>
Beryllium Acetate	0.002 mg/m <sup>3</sup>	0.002 mg/m <sup>3</sup>
Cobalt	0.02 mg/m <sup>3</sup>	0.1 mg/m <sup>3</sup>
Copper	0.2 mg/m <sup>3</sup> (fumes)	0.1 mg/m <sup>3</sup> (fumes)
Iron	10 mg/m <sup>3</sup>	5 mg/m <sup>3</sup>

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Manganese Acetate Tetrahydrate	0.2 mg/m <sup>3</sup>	C 5 mg/m <sup>3</sup>
Strontium Nitrate	Not Available	Not Available
Ammonium Metavanadate	0.05 mg/m <sup>3</sup>	Not Available
Nitric Acid	2 mg/kg	5 mg/m <sup>3</sup>

### Section 9. Physical and Chemical Properties

Physical State: Liquid  
 Color: Clear, colorless liquid  
 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: (H<sub>2</sub>O = 1): Approximately 1.0  
 Solubility in H<sub>2</sub>O: Complete  
 Auto ignition temperature: N/A  
 Decomposition temperature: N/A  
 Molecular Weight: N/A

### Section 10. Stability and Reactivity

Stability Indicator: YES  
 Conditions to Avoid: Avoid heat and contact with combustible and other incompatible materials.  
 Incompatibles: Strong reducing agents, metallic powders, strong bases, chlorine, calcium compounds, hydroxides, organic materials, strong alkali, cyanides.  
 Hazardous Decomposition Products: NO<sub>x</sub> compounds including nitric oxide (NO), nitrogen dioxide (NO<sub>2</sub>), nitrous oxide (N<sub>2</sub>O) and nitric acid mist or vapor.  
 Hazardous Polymerization: Will not occur.

### Section 11. Toxicological Information

May cause severe irritation/burns to respiratory system and areas of contact. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.

#### RTECS #:

HNO <sub>3</sub> - QU5775000	BaCO <sub>3</sub> - CQ8600000	Ba(NO <sub>3</sub> ) <sub>2</sub> - CQ9625000
Be- DS1750000	Co- GF8750000	Cu- GL5325000
Fe- NO4565500	Mn- AI5775000	V- YW0875000
Sr(NO <sub>3</sub> ) <sub>2</sub> - WK9800000		

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LD<sub>LO</sub> Oral, Human: (Nitric Acid) 430 mg/kg;  
LD<sub>LO</sub> Oral, Human: (Barium Carbonate) 17 mg/kg;  
LD<sub>50</sub> Oral, Rat: (Ba(NO<sub>3</sub>)<sub>2</sub>) 355 mg/kg.  
TD<sub>LO</sub> Intratracheal, Rat: (Beryllium Acetate) 13 mg/kg;  
LD<sub>LO</sub> Oral, Rabbit: (Cobalt) 750 mg/kg,  
LD<sub>50</sub>; TD<sub>LO</sub> Oral, Human: (Copper) 120 µg/kg;  
LD<sub>50</sub> Oral, Rat: (Manganese) 3730mg/kg;  
LD<sub>50</sub> Oral, Rat: ( NH<sub>4</sub>VO<sub>3</sub>) 58 mg/kg .

## Section 12. Ecological Information

Ecotoxicological information: Do not allow material to reach ground water, water bodies, or sewage system. 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

Follow Federal, state and local regulations for acid 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)

## 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, R21, R22, R24, R25, R34, R45, R48 Harmful by inhalation or skin contact; Toxic in contact with the skin and if swallowed; Causes burns; May cause cancer; Danger of serious damage to health by prolonged exposure; Danger of cumulative effects.  
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.

Theodore C. Rains, Ph.D.