

Safety Data Sheet

Section 1. Product and Company Identification

Product Identification: ICP-SS
 MSDS Number: ICP-SS
 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.

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

Section 3. Composition

Component	CAS/EINECS Registry #	Percent Concentration
Aluminum	7429-90-5/231-072-3	0.01
Antimony	7440-36-0/231-146-5	0.005
Arsenic	7440-38-2/231-148-6	0.0025
Barium Carbonate (BaCO ₃)	513-77-9/208-167-3	0.002 (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	0.002 (as Be)
Boric Acid (H ₃ BO ₃)	10043-35-3/233-139-2	0.002 (as B)
Cadmium	7440-43-9/231-152-8	0.002
Calcium Carbonate (CaCO ₃)	471-34-1/207-439-9	0.2 (as Ca)
Chromium	7440-47-3/231-157-5	0.002
Cobalt	7440-48-4/231-158-0	0.002
Copper	7440-50-8/231-159-6	0.002
Iron	7439-89-6/231-096-4	0.01
Lead	7439-92-1/231-100-4	0.0025

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Magnesium	7439-95-4/231-104-6	0.05
Manganese Acetate Tetrahydrate (Mn(CH ₃ CO ₂) ₂)*4H ₂ O	6156-78-1/211-334-3	0.002 (as Mn)
Nickel	7440-02-0/231-111-4	0.002
Potassium Nitrate (KNO ₃)	7757-79-1/231-818-8	0.015 (as K)
Selenium	7782-49-2/231-957-4	0.005
Ammonium Hexafluorosilicate (NH ₄) ₂ SiF ₆)	16919-19-0/240-968-3	0.05 (as Si)
Silver	7440-22-4/231-131-3	<0.001
Sodium Carbonate (Na ₂ CO ₃)	497-19-8/207-838-8	0.2 (as Na)
Strontium Nitrate (Sr(NO ₃) ₂)	10042-76-9/233-131-9	0.01 (as Sr)
Thallium	7440-28-0/231-138-1	0.001
Tin	7440-31-5/231-141-8	0.002
Ammonium Metavanadate (NH ₄ VO ₃)	7803-55-6/232-261-3	0.002 (as V)
Zinc	7440-66-6/231-175-3	0.01
Nitric Acid	7697-37-2/ 231-714-2	2
Hydrofluoric Acid	7664-39-3/231-634-8	0.03
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. Gently wash with plenty of soap and water. Rub calcium gluconate gel immediately to skin.

Obtain medical assistance. Wash contaminated clothing before reuse.

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_x 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.

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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 appropriate gloves impermeable to HF, safety glasses with face shield, and lab coat/apron to avoid any direct skin contact.

Exposure Limits:

Component	ACGIH TLV	OSHA PEL
Aluminum	10 mg/m ³	15 mg/m ³
Antimony	0.5 mg/m ³	0.5 mg/m ³
Arsenic	0.01 mg/m ³	10 µg/ m ³
Barium	0.5 mg/m ³	0.5 mg/m ³
Beryllium Acetate	0.002 mg/m ³	0.002 mg/m ³
Boric Acid	Not Available	Not Available
Cadmium	0.002 mg/m ³ (respirable particulate)	0.005 mg/m ³
Calcium Carbonate	0.5 mg/m ³	0.5 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)
Iron	10 mg/m ³	5 mg/m ³
Lead	0.05 mg/m ³	0.05 mg/m ³
Magnesium	Not Available	Not Available
Manganese Acetate Tetrahydrate	0.2 mg/m ³	C 5 mg/m ³
Nickel	1.5 mg/m ³	1 mg/m ³
Potassium Nitrate	Not Available	Not Available
Selenium	0.2 mg/m ³	0.2 mg/ m ³
Ammonium	Not Available	Not Available

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Hexafluorosilicate		
Silver	0.1 mg/m ³	Not Available
Sodium Carbonate	Not Available	Not Available
Strontium Nitrate	Not Available	Not Available
Thallium	0.1 mg/m ³	0.1 mg/m ³
Tin	2 mg/m ³	2 mg/m ³
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
Hydrofluoric Acid	C: 3 mg/ml	2.5 mg/m ³ STEL: 6 mg/ml

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: (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: 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: HF and NO_x compounds including nitric oxide (NO), nitrogen dioxide (NO₂), nitrous oxide (N₂O) 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. The symptoms may be delayed.

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RTECS#

HNO ₃ - QU5775000	HF- MW7875000
Al- BD0330000	Sb- CC4025000
As- CG0525000	BaCO ₃ - CQ8600000
Be ₄ O(C ₂ H ₃ O ₂) ₆ – DS2900000	H ₃ BO ₃ - ED4560000
CaCO ₃ - FF9335000	Cd- EU9800000
Cr- GB4200000	Co- GF8750000
Cu- GL5325000	Fe- NO4565500
Pb- OF7525000	Mg- OM2100000
Mn-AI5775000	Ni- QR5950000
KNO ₃ - TT3700000	Se- VS7700000
(NH ₄) ₂ SiF ₆ - VV7800000	Ag- VW3500000
Na ₂ CO ₃ - VZ4050000	Sr(NO ₃) ₂ - WK9800000
Tl- XG3425000	Sn- XP7320000
NH ₄ VO ₃ - YW0875000	Zn- ZG8600000
Ba(NO ₃) ₂ - CQ9625000	

LD_{LO} Oral, Human: (Nitric Acid) 430 mg/kg
 LC_{LO} Inhalation, Human: (Hydrofluoric Acid) 50 mg/kg/30 min
 LD₅₀ Oral, Rat: (Aluminum) >5000 mg/kg
 LD₅₀ Oral, Rat: (Antimony) 7g/kg
 LD₅₀, Oral, Rat: (Arsenic) 763 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
 LD₅₀ Oral, Rat: (Boric Acid) 2660 mg/kg; LD_{LO}, Oral, Woman: (Boric Acid) 400 mg/kg, behavioral and gastrointestinal effects noted
 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) 3730mg/kg
 LD₅₀, Intravenous, Mouse: (Nickel) 50 mg/kg
 LD₅₀ Oral, Rat: (Potassium Nitrate) 3750 mg/kg
 LD₅₀, Oral, Rat: (Selenium) 6700 mg/kg
 TD_{LO} Implant; LD_{LO} Oral, Rat: (Ammonium Hexafluorosilicate) 100 mg/kg
 TD_{LO} Implant, Mouse: (Silver) 11 g/kg
 LD₅₀, Oral, Mouse: (Sodium Carbonate) 6600 mg/kg
 TD_{LO} Oral, Man: (Thallium) 5,714 µg/kg
 TD_{LO} Implant, Rat: (Tin) 395 gm/kg
 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. 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.

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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)

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

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

RCRA Status: Yes (Hydrofluoric Acid-U134); (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, R45 Harmful by inhalation, skin contact, or if swallowed. May cause cancer.

Safety Phrases: S36/37/39 Wear suitable protective clothing, gloves and eye/face protection.

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.