Section 1. Product and Company Identification

Product Identification:	ICP-MS-SS-2
SDS Number:	ICP-MS-SS-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: H314 - Causes severe skin burns and eye damage
Precautionary Statement:
P280: Wear protective gloves/protective clothing/eye protection/face protection
P264: Wash hands thoroughly after handling
P260: Do not breathe dust/fume/gas/mist/vapours/spray
P303+361+353: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue Rinsing
P301+330+331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting
P304+340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P310: Immediately call a POISON CENTER or doctor/physician

Section 3. Composition

Element:	Cas#/EINECS	Concentration %
Water, deionized	7732-18-5/ 231-791-2	balance
Aluminum	7429-90-5/231-072-3	<0.001
Barium (BaCO3)	513-77-9/208-167-3	<0.001
Beryllium (Be4O(C2H3O2)6)	19049-40-2/242-785-4	<0.001
Bismuth	7440-69-9/231-177-4	<0.001
Cerium (CeO2)	1306-38-3/215-150-4	<0.001
Cesium (Cs2CO3)	534-17-8 /208-591-9	<0.001
Cobalt	7440-48-4/231-158-0	<0.001
Copper	7440-50-8/231-159-6	<0.001
Gallium	7440-55-3/231-163-8	<0.001

Holmium (Ho2O3)	12055-62-8/235-015-3	<0.001
Indium	7440-74-6/231-180-0	<0.001
Lithium (Li2CO3)	554-13-2/209-062-5	<0.001
Magnesium	7439-95-4/231-104-6	<0.001
Manganese (Mn(CH3CO2)2 *4H2O)	6156-78-1/211-334-3	<0.001
Nickel	7440-02-0/ 231-111-4	<0.001
Rhodium (RhCl3 xH2O)	20765-98-4/233-165-4	<0.001
Scandium (Sc2O3)	12060-08-1/235-042-0	<0.001
Silver	7440-22-4/231-131-3	<0.001
Strontium (Sr(NO302)	10042-76-9/233-131-9	<0.001
Tantalum	7440-25-7/231-135-5	<0.001
Terbium (Tb4O7)	12037-01-3/234-856-3	<0.001
Thallium	7440-28-0/231-138-1	<0.001
Vanadium (NH4VO3)	7803-55-6/232-261-3	<0.001
Yttrium (Y2O3)	1314-36-9/215-233-5	<0.001
Zinc	7440-66-6/231-175-3	<0.001
Nitric Acid	7697-37-2/ 231-714-2	2

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.

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.

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.

Exposure Limits:

Component	ACGIH TLV	OSHA PEL
Aluminum	10 mg/m3	15 mg/m3
Barium (BaCO3)	0.5 mg/m3	0.5 mg/m3
Beryllium (Be4O(C2H3O2)6)	0.00005 mg/m3	0.002 mg/m3
Bismuth	Not Available	Not Available
Cerium (CeO2)	Not Available	Not Available
Cesium (Cs2CO3)	Not Available	Not Available
Cobalt	0.02 mg/m3	0.1 mg/m3
Copper	0.2 mg/m3 (fumes)	0.1 mg/m3 (fumes)
Gallium	Not Available	Not Available
Holmium (Ho2O3)	Not Available	Not Available
Indium	0.05 mg/m3	0.05 mg/m3
Lithium (Li2CO3)	Not Available	Not Available
Magnesium	Not Available	Not Available
Manganese (Mn(CH3CO2)2 *4H2O)	0.2 mg/m3	C 5 mg/m3
Nickel	1.5 mg/m3	1 mg/m3
Rhodium (RhCl3 xH2O)	0.001mg/mL	0.001mg/mL
Scandium (Sc2O3)	Not Available	Not Available
Silver	0.1 mg/m3	0.05 mg/m3
Strontium (Sr(NO302)	Not Available	Not Available
Tantalum	2 mg/m3	2 mg/m3
Terbium (Tb4O7)	Not Available	Not Available
Thallium	0.1 mg/m3	0.1 mg/m3
Vanadium (NH4VO3)	0.05 mg/m3	0.05 mg/m3
Yttrium (Y2O3)	1 mg/m3	1 mg/m3

Zinc	5 mg/m3	5 mg/m3
Nitric Acid	2 mg/kg	5 mg/m3

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_2O = 1): N/A
Solubility in H_2O: 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: Metals, chlorine, organic materials, strong alkali, cyanides.
Incompatibles: Strong reducing agents.
Hazardous Decomposition Products: NO_x compounds including nitric oxide (NO), nitrogen dioxide (NO_2), nitrous oxide (N_2O) and nitric acid mist or vapor.
Hazardous Polymerization: Will not occur.

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.

Component	RTECS	Toxicity
Aluminum	BD0330000	LD50 Oral, Rat: (Aluminum) >5000 mg/kg
Barium (BaCO3)	CQ8600000	LDLO Oral, Human: (Barium Carbonate) 17 mg/kg.
Beryllium (Be4O(C2H3O2)6)	DS2900000	N/A
Bismuth	EB2600000	LD50 Oral, Rat: (Bismuth) 5 gm/kg
Cerium (CeO2)	FK6310000	LD50 Oral, Rat: (Cerium Dioxide) >5 g/kg.
Cesium (Cs2CO3)	FK9400000	LD50 Oral, Rat: (Cs2CO3) 2333 mg/kg.
Cobalt	GF8750000	LDLO Oral, Rabbit: (Cobalt) 750 mg/kg.
Copper	GL5325000	TDLO Oral, Human: (Copper) 120 mg/kg.
Gallium	LW8610000	N/A

Holmium (Ho2O3)	N/A	N/A
Indium	NL1050000	LDLO Subcutaneous, Mouse: (Indium) 10mg/kg.
Lithium (Li2CO3)	OJ5800000	LD50 Oral, Rat: (Lithium Carbonate) 525 mg/kg.
Magnesium	OM2100000	N/A
Manganese (Mn(CH3CO2)2 *4H2O)	AI5775000	LD50 Oral, Rat: (Manganese) 3730 mg/kg.
Nickel	QR5950000	LD50, Intravenous, Mouse: (Nickel) 50 mg/kg.
Rhodium (RhCl3 xH2O)	VI9275000	LD50 Oral, Rat: (RhCl3) 1302 mg/kg
Scandium (Sc2O3)	N/A	N/A
Silver	VW3500000	LD50 Oral, Rat: (Silver) > 5,000 mg/kg
Strontium (Sr(NO302)	WK9800000	LD50 Oral, rat: (Sr(NO3)2) 2750 mg/kg
Tantalum	WW5505000	TDLO Implant Rat: (Tantalum) 3,760 mg/kg.
Terbium (Tb4O7)	N/A	N/A
Thallium	XG3425000	TDLO Oral, Man: (Thallium) 5,714 mg/kg.
Vanadium (NH4VO3)	YW0875000	LD50 Oral, Rat: (NH4VO3) 58 mg/kg.
Yttrium (Y2O3)	ZG3850000	LDLO Oral, Mouse: (Yttrium Oxide) >6 g/kg.
Zinc	ZG8600000	LDLO Oral, Duck: (Zinc) 388 mg/kg.
Nitric Acid	QU5775000	LDLO Oral, Human: (Nitric Acid) 430 mg/kg.

Section 12. Ecological Information

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

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: No.
SARA: Subject to the reporting requirements of Section 313 of SARA Title III and of 40 CFR 372
Risk Phrases: R36/38 Irritating to eyes and skin.
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.