Section 1. Product and Company Identification

Product Identification:	Element 2 Stock Tune Solution
SDS Number:	ICP-MS-TS-19
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
Barium Ba(NO3)2	10022-31-8/233-020-5	<0.001
Boron (H3BO3)	10043-35-3/233-139-2	<0.001
Cobalt	7440-48-4/231-158-0	<0.001
Gallium	7440-55-3/231-163-8	<0.001
Indium	7440-74-6/231-180-0	<0.001
Iron	7439-89-6/231-096-4	<0.001
Lithium (Li2CO3)	554-13-2/209-062-5	<0.001
Lutetium (Lu2O3)	12032-20-1/234-764-3	<0.001
Potassium (KNO3)	7757-79-1/231-818-8	<0.001

Rhodium (N3O9Rh • xH2O)	10139-58-9	<0.001
Scandium (Sc2O3)	12060-08-1/235-042-0	<0.001
Sodium (Na2CO3)	497-19-8/207-838-8	<0.001
Thallium	7440-28-0/231-138-1	<0.001
Uranium (U3O8)	1344-59-8/215-702-4	<0.001
Yttrium (Y2O3)	1314-36-9/215-233-5	<0.001
Hydrochloric Acid	7647-01-0/231-595-7	<0.5
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. Harmful if absorbed through the skin.

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. May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membrane and upper respiratory tract.

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. Hydrochloric acid is a negligible fire hazard when exposed to heat and/or flames. Hydrochloric acid may react with the evolution of heat on contact with water; the acid may release toxic, corrosive, flammable, or explosive gases.

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. Avoid breathing vapors, mist, or gas. 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 Ba(NO3)2	0.5 mg/m3	0.5 mg/m3
Boron (H3BO3)	Not Available	Not Available
Cobalt	0.02 mg/m3	0.1 mg/m3
Gallium	Not Available	Not Available
Indium	0.05 mg/m3	0.05 mg/m3
Iron	10 mg/m3	15 mg/m3
Lithium (Li2CO3)	Not Available	Not Available
Lutetium (Lu2O3)	Not Available	Not Available
Potassium (KNO3)	Not Available	Not Available
Rhodium (N3O9Rh • xH2O)	Not Available	Not Available
Scandium (Sc2O3)	Not Available	Not Available
Arsenic	0.01 mg/m3	10 µg/ m3
Thallium	0.1 mg/m3	0.1 mg/m3
Uranium (U3O8)	0.2 mg/m3	C 5 mg/m3
Yttrium (Y2O3)	1 mg/m3	1 mg/m3
Hydrochloric Acid	C: 3 mg/ml	2.5 mg/m3; STEL: 6 mg/ml
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, hydroxides, carbonates, organic materials, strong alkali, cyanides.
Incompatibles: Strong reducing agents. Strong oxidizing 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. When heated to decomposition, emits toxic hydrogen chloride fumes and will react with water or steam to produce heat and toxic and corrosive fumes. Thermal oxidative decomposition produces toxic chlorine fumes and explosive hydrogen gas.
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
Barium Ba(NO3)2	CQ9625000	LD50 Oral, Rat: (Ba(NO3)2) 355 mg/kg.
Silicon (NH4)2SiF6	VV7800000	LD50, Oral, Rat, 125 mg/kg.
Cobalt	GF8750000	LDLO Oral, Rabbit: (Cobalt) 750 mg/kg.
Gallium	LW8610000	N/A
Indium	NL1050000	LDLO Subcutaneous, Mouse: (Indium) 10mg/kg.
Iron	NO4565500	LD50 Oral, Rat: (Iron) 30gm/kg
Lithium (Li2CO3)	OJ5800000	LD50 Oral, Rat: (Lithium Carbonate) 525 mg/kg.
Potassium (KNO3)	TT3700000	LD50 Oral, Rat: (Potassium Nitrate) 3750 mg/kg
Sodium (Na2CO3)	VZ4050000	LD50, Oral, Mouse: (Sodium Carbonate) 6600 mg/kg.
Strontium (Sr(NO302)	WK9800000	LD50 Oral, rat: (Sr(NO3)2) 2750 mg/kg
Scandium (Sc2O3)	N/A	N/A
Sodium (Na2CO3)	VZ4050000	LD50, Oral, Mouse: (Sodium Carbonate) 6600 mg/kg.
Thallium	XG3425000	TDLO Oral, Man: (Thallium) 5,714 mg/kg.
Uranium (U3O8)	YR3490000	TD50 Unreported Route, Rat: (Uranium Oxide) 750 mg/kg.
Yttrium (Y2O3)	ZG3850000	LDLO Oral, Mouse: (Yttrium Oxide) >6 g/kg.
Hydrochloric Acid	MW7875000	Oral, rabbit: (Hydrochloric Acid) LD50 = 900 mg/kg

Silicon (NH4)2SiF6 VV7800000 LD50, Oral, Rat, 125 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.