Section 1. Product and Company Identification

Product Identification: AG-7500 Series Tuning Sol
SDS Number: ICP-MS-TS-9 Solution B
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
Acute Toxicity, Oral, Category 5
Labeling:

Symbol:
Signal Word: Danger.
Hazard Statement: Causes severe skin burns and eye damage. May be harmful if swallowed.
Precautionary Statement: Wear protective gloves/clothing and eye/face protection. Call a POISON CENTER/doctor/physician if you feel unwell.

Section 3. Composition

Component	CAS/EINECS Registry #	Percent Concentration
Antimony	7440-36-0/231-146-5	0.001
Germanium	7440-56-4/ 231-164-3	0.001
Ammonium Hexachloroiridate (III) Hydrate ($(NH_4)_3IrCl_6$)	29796-57-4	<0.001 (as Ir)
Molybdenum	7439-98-7/231-107-2	0.001
Palladium	7440-05-3/ 231-115-6	0.001
Ammonium Hexachlororuthenate $(NH_4)_2RuCl_6$	18746-63-9/242-552-7	0.001 (as Ru)
Tin	7440-31-5/231-141-8	0.001
Titanium	7440-36-0/231-146-5	<0.001
Hydrochloric Acid	7647-01-0/231-595-7	10
Nitric Acid	7697-37-2/ 231-714-2	1
Hydrofluoric Acid	7664-39-3/231-634-8	<0.5
Water, deionized	7732-18-5/231-791-2	Balance

Section 4. First Aid Measures

Skin Contact: 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: 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. 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. 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 general and local (e.g., fume hood) ventilation systems to maintain airborne concentrations below the TLV. Ensure the availability of eyewash stations and safety showers.

Respiratory Protection: Provide approved respiratory apparatus for non-routine or emergency use. Use an approved vapor respirator when the vapor or mist concentrations are high. If necessary, refer to the NIOSH document Guide to the Selection and Use of Particulate Respirators Certified under 42 CFR 84 for selection and use of respirators certified by NIOSH.

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
Antimony	0.5 mg/m^3	0.5 mg/m^3
Germanium	Not Available	Not Available
Ammonium Hexachloroiridate (III) Hydrate	Not Available	Not Available
Molybdenum	5 mg/m^3	5 mg/m^3
Palladium	Not Available	Not Available
Ammonium Hexachlororuthenate	Not Available	Not Available
Tin	2 mg/m^3	2 mg/m^3
Titanium	5 mg/m^3	5 mg/m^3
Hydrochloric Acid	C 5ppm C 7 mg/m^3	C 5ppm C 7 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: Orange
Odor: Odorless to a faint pungent odor
Odor threshold: None
pH: <1
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, hydroxides, carbonates, cyanides.
Incompatibles: Strong oxidizing agents.
Hazardous Decomposition Products: When heated to decomposition, emits toxic hydrochloric acid 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: Does not polymerize.

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. .

RTECS#

HCl- MW4025000	HNO_3 - QU5775000	HF - MW7875000
Sb - CC4025000	Ge - LY5200000	Mo - QA4680000
Pd- RT3480500	Sn - XP7320000	Ti – XR1700000

Toxicity Data:

LD_{50} Oral, Rabbit: (Hydrochloric Acid) 900 mg/kg; LC_{LO}, inhalation, human: (Hydrochloric Acid) 3000 ppm/5 minutes
LD_{LO} Oral, Human: (Nitric Acid) 430 mg/kg
LC_{LO} Inhalation, Human: (Hydrofluoric Acid) 50 mg/kg/30 min
LD_{50} Oral, rat: (Antimony) 7 gm/kg
TD_{LO} Oral, Mouse: (Molybdenum) 448 mg/kg (multigenerations)
TD_{LO} Implant, Rat: (Tin) 395 gm/kg

Section 12. Ecological Information

Ecotoxicological information: Do not allow material to reach ground water, water bodies, or sewage system. Hydrochloric acid has a slight acute and chronic toxicity to aquatic life.

Section 13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to a RCRA approved waste facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations.

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. (Hydrochloric 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: All components of this solution are listed on the TSCA Inventory
RCRA Status: Yes – HF (U134)
SARA: Section 302 (Extremely Hazardous Substances) No

Section 313 Yes (Sb)
Risk Phrases: R20/21/22 Harmful by inhalation, skin contact, or if ingested
Safety Phrases: S35/36/37 Wear suitable protective clothing, gloves and eye 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.