Section 1. Product and Company Identification

Product Identification:	Oral Elemental Impurities Standard
SDS Number:	USP232-1
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
Arsenic	7440-38-2/231-148-6	<0.001
Cadmium	7440-43-9/231-152-8	0.0025
Lead	7439-92-1/231-100-4	<0.001
Mercury	7439-97-6/231-106-7	0.0015
Nitric Acid	7697-37-2/ 231-714-2	7
Water, deionized	7732-18-5/ 231-791-2	Balance

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
Arsenic	0.01 mg/m^3	10 µg/ m^3
Cadmium	0.002 mg/m^3 (respirable particulate)	0.005 mg/m^3
Lead	0.05 mg/m^3	0.05 mg/m^3
Mercury	0.05 mg/m^3	0.025 mg/m^3
Nitric Acid	2 mg/kg	5 mg/m^3

Section 9. Physical and Chemical Properties

Physical State: Liquid

Color: Clear, 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): Approximately 1.0
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.

Arsenic, Cadmium, Lead, and Mercury are known or investigated as possible carcinogenic substances.

RTECS#

HNO_3: QU5775000	As: CG0525000
Cd: EU9800000	Pb: OF7525000
Hg; OV4550000	

LD_{LO} Oral, Human: (Nitric Acid) 430 mg/kg
LD_{50}, Oral, Rat: (Arsenic) 763 mg/kg.
LD_{LO} Oral, Human: (Cadmium) 2330 mg/kg.
TD_{50} Oral, Woman: (Lead) 450 mg/kg/6 years
TC_{LO} Inhalation, Rat: (Mercury) 1 mg/m^3/24hrs/5wks continuous.

Epidemiology: Intraperitoneal, rat: TDLo = 400 mg/kg/14D-I (Tumorigenic - equivocal tumorigenic agent by RTECS criteria - tumors at site of application).
Teratogenicity: Inhalation, rat: TCLo = 1 mg/m3/24H (female 1-20 day(s) after conception) Effects on Embryo or Fetus - fetotoxicity (except death, e.g., stunted fetus).
Reproductive Effects: Inhalation, rat: TCLo = 890 ng/m3/24H (male 16 week(s) pre-mating) Paternal Effects - spermatogenesis (incl. genetic material, sperm morphology, motility, and count).; Inhalation, rat: TCLo = 7440 ng/m3/24H (male 16 week(s) pre-mating) Fertility - post-implantation mortality (e.g. dead and/or resorbed implants per total number of implants).
Mutagenicity: Cytogenetic Analysis: Unreported, man = 150 ug/m3.
Neurotoxicity: The brain is the critical organ in humans for chronic vapor exposure; in severe cases, spontaneous degeneration of the brain cortex can occur as a late sequela to past exposure.

Section 12. Ecological Information

Ecotoxicological information: Do not allow material to reach ground water, water bodies, or sewage system.
Toxicity to fish LC_{50} - Labeo rohita - 0.018 mg/l - 96.0 h
Fish: Rainbow trout: LC50 = 0.16-0.90 mg/L; 96 Hr
Bioaccumulation
Carassius auratus (goldfish) - 1,789 d
Bioconcentration factor (BCF): 155,986

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 (Mercury–U151)
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 ingestion. 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

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