

## Section 1. Product and Company Identification

Product Identification: 10,000 µg/mL Mercury in 10% HNO<sub>3</sub>

MSDS Number: 10M33-1

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 1B

Serious Eye Damage/ Eye Irritation, Category 1

Acute Toxicity, Inhalation, Category 1

Reproductive toxicity, Category 1

STOT, Repeated Exposure, Respiratory tract irritation, Category 2

Acute aquatic toxicity, Category 1

Chronic aquatic toxicity, Category 1

Acute toxicity, Oral (Category 2)

Acute toxicity, Dermal (Category 1)

Germ cell mutagenicity (Category 2)

**Labeling:****Symbol:****Signal Word:** Danger.

**Hazard Statement:** Causes severe skin burns and eye damage. Causes serious eye damage. Fatal if inhaled. May damage fertility or the unborn child. Causes damage to organs through prolonged or repeated exposure. Toxic to aquatic life with long lasting effects. Suspected of causing genetic defects. May be fatal if swallowed or in contact with skin.

**Precautionary Statement:** Wear protective gloves/clothing and eye/face protection. Wash thoroughly after handling. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required. Do not breathe dust/fume/gas/mist/vapours/spray. Avoid release to the environment.

## Section 3. Composition

Component	CAS/EINECS Registry #	Percent Concentration
Mercury	7439-97-6/231-106-7	1
Nitric Acid	7697-37-2/ 231-714-2	10
Water, deionized	7732-18-5/ 231-791-2	Balance

## Section 4. First Aid Measures

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**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. Immediately call a POISON CENTER or doctor/physician.

**IF SWALLOWED:** Rinse mouth. Do NOT induce vomiting.

**IF INHALED:** Remove to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/physician.

**IF exposed or concerned:** Get medical attention/advice.

**Target Organs:** Eyes, skin, respiratory system. Increases risk of lung, liver, kidney, and bladder cancer with prolonged exposure.

### 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<sub>x</sub> 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.

**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 proper gloves, safety glasses with side shields, lab coat/apron.

#### Exposure Limits:

Component	ACGIH TLV	OSHA PEL
Mercury	0.05 mg/m <sup>3</sup>	0.025 mg/m <sup>3</sup>
Nitric Acid	2 mg/kg	5 mg/m <sup>3</sup>

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### 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<sub>2</sub>O = 1): Approximately 1.0  
 Solubility in H<sub>2</sub>O: Complete  
 Auto ignition temperature: N/A  
 Decomposition temperature: N/A  
 Molecular Weight: 200.59 (Hg)

### Section 10. Stability and Reactivity

Stability Indicator: YES  
 Conditions to Avoid: Metals, chlorine, organic materials, strong alkali, cyanides, heat.  
 Incompatibles: Strong reducing agents.  
 Hazardous Decomposition Products: NO<sub>x</sub> compounds including nitric oxide (NO), nitrogen dioxide (NO<sub>2</sub>), nitrous oxide (N<sub>2</sub>O) 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. Investigated as a tumorigen, mutagen, reproductive effector.

**RTECS#**

HNO<sub>3</sub>; QU5775000                      Hg; OV4550000

LD<sub>LO</sub> Oral, Human: (Nitric Acid) 430 mg/kg.

TC<sub>LO</sub> Inhalation, Rat: (Mercury) 1 mg/m<sup>3</sup>/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/m<sup>3</sup>/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/m<sup>3</sup>/24H (male 16 week(s) pre-mating) Paternal Effects - spermatogenesis (incl. genetic material, sperm morphology, motility, and count).; Inhalation, rat: TCLo = 7440 ng/m<sup>3</sup>/24H (male 16 week(s) pre-mating) Fertility - post-implantation mortality (e.g. dead and/or resorbed implants per total number of implants).

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**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<sub>50</sub> - 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 of SARA Title III and of 40 CFR 372

Risk Phrases: R20/21/22 Harmful by inhalation, skin contact, or if swallowed.

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

WHMIS Information (Canada): E: Corrosive

D1A: Very Toxic Material Causing Immediate and Serious Toxic Effects

D2A: Very Toxic Material Causing Other Toxic Effects

#### 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.