

Safety Data Sheet

Section 1. Product and Company Identification

Product Identification: 1000 µg/mL Mercury in 3% HNO₃ + 4% HCl
SDS Number: 100077-12
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
Germ cell mutagenicity (Category 2)
Reproductive toxicity (Category 2)

Labeling:



Symbol:

Signal Word: Danger.

Hazard Statement: Causes severe skin burns and eye damage. May cause genetic effects. Suspected of damaging fertility or the unborn child.

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.

Section 3. Composition

Component	CAS/EINECS Registry #	Percent Concentration
Mercury Chloride (HgCl ₂)	7487-94-7/	0.1 (as Hg)
Nitric Acid (HNO ₃)	7697-37-2/231-714-2	3
Hydrochloric Acid (HCl)	7647-01-0/231-595-7	4
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. 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.

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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. NO_x compounds can be released in event 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. Remove source of ignition if hydrogen is a hazard. Cover the spill with sodium bicarbonate or a soda ash-slaked lime mixture (50:50) to neutralize the acid. 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
Mercury Chloride	0.025 mg/m ³	0.1 mg/m ³
Nitric Acid	2 mg/kg	5 mg/m ³
Hydrochloric Acid	C 5ppm C 7 mg/m ³	C 5ppm C 7 mg/m ³

Section 9. Physical and Chemical Properties

Physical State: Liquid

Color: Clear, colorless liquid

Odor: Odorless to a faint pungent odor

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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: (H₂O = 1): Approximately 1.0
 Solubility in H₂O: 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, silver, organic materials, strong alkali, cyanides.
 Incompatibles: Strong reducing agents.
 Hazardous Decomposition Products: NO_x compounds including nitric oxide (NO), nitrogen dioxide (NO₂), nitrous oxide (N₂O) 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.

RTECS#

HNO₃- QU5775000

HCl-MW4025000

Toxicity Data:

LD_{LO} Oral, Human: (Nitric Acid) 430 mg/kg. LD₅₀ Oral, Rabbit: (Hydrochloric Acid) 900 mg/kg;
 Mercuric chloride: ORAL (LD50): Acute: 1 mg/kg [Rat.]. 6 mg/kg [Mouse]. DERMAL (LD50):
 Acute: 41 mg/kg [Rat]

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.

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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, Inorganic, n.o.s. (Nitric Acid, Hydrochloric acid)
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.