Safety Data Sheet

Section 1. Product and Company Identification

Product Identification:	1000 µg/mL Sulfur in Water
MSDS Number:	100054-5
Company Identification:	High-Purity Standards P.O. Box 41727 Charleston, SC 29423 Telephone: (843) 767-7900 FAX: (843) 767-7906

Section 2. Hazard Identification

Classification:
Skin Corrosion/Irritation, Category 1B
Serious Eye Damage/ Eye Irritation, Category 1
Labeling:

Symbol:
Signal Word: Danger.
Hazard Statement: Causes severe skin burns and eye damage. Causes serious eye damage.
Precautionary Statement: Wear protective gloves/clothing and eye/face protection. Wash thoroughly after handling.

Section 3. Chemical Composition

Component	CAS/EINECS Registry #	Percent Concentration
Sulfuric Acid	7664-93-9/231-639-5	0.1 (as S)
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: Although sulfuric acid is a negligible fire hazard, it is an oxidizer and may explode on contact with combustible materials. However, the risk is reduced due to the weaker concentration of sulfuric acid. Not considered to be a fire or explosion hazard.
Extinguishing Media: Dry chemical, foam, or carbon dioxide. Water is acceptable to use on this solution due to the weak concentrations of acid involved.
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. 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. Keep container tightly sealed. 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
Sulfuric Acid	5 mg/m^3	1 mg/m^3

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): Approximately 1.0
Solubility in H_2O: Complete
Auto ignition temperature: N/A
Decomposition temperature: N/A
Molecular Weight: 32.07 (S)

Section 10. Stability and Reactivity

Stability Indicator: YES
Conditions to Avoid: Incompatibles
Incompatibles: Organic materials, chlorates, reducing agents, strong alkali, hydroxides, cyanides.

Hazardous Decomposition Products: None expected.
Hazardous Polymerization: Will not occur.

Section 11. Toxicological Information

"Strong inorganic acid mists containing sulfuric acid" is classified by the International Agency for Research on Cancer as a known human carcinogen.

Toxicity Data:

H_2SO_4- RTECS# WS5600000

LD_{50} Oral, Rat: (Sulfuric Acid) 2140 mg/kg; LC_{50} Inhalation, Rat: (Sulfuric Acid) 510 mg/m^3/2H. No toxic effect noted.

Section 12. Ecological Information

Ecotoxicological information: Concentrated Sulfuric Acid has moderate acute and chronic effects to aquatic life; however, the concentration in this product is dilute.

Section 13. Disposal Considerations

General: Follow Federal, state and local regulations for acid 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. (Sulfuric 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)

OSHA Status: The items listed either do not contain any specifically hazardous material or the potentially hazardous material is present in such low concentration that the items do not present any immediate threat to health and safety. These items do not meet the OSHA Hazard Communication Standard (29 CFR 1910.1200) definition of a hazardous material.
TSCA Status: The components of this solution are listed on the TSCA Inventory.
RCRA Status: No.
SARA: Subject to the reporting requirements of Section 313 or SARA Title III and of 40 CFR 372
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 MSDS was prepared carefully and represents the best data currently available to us; however, HPS does not certify the data on the MSDS. Certified values for this material are given only on the Certificate of Analysis.
Theodore C. Rains, Ph.D.