

## MATERIAL SAFETY DATA SHEET

### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**Product Name:** Sulfuric Acid Standard Solution 0.500 N  
**Catalog Number:** 212132

Hach Company  
P.O.Box 389  
Loveland, CO USA 80539  
(970) 669-3050

Emergency Telephone Numbers:  
(Medical and Transportation)  
(303) 623-5716 24 Hour Service  
(515)232-2533 8am - 4pm CST

**MSDS Number:** M00712

**Chemical Name:** Not applicable

**CAS No.:** Not applicable

**Chemical Formula:** Not applicable

**Chemical Family:** Not applicable

**Hazard:** Causes eye burns. May cause irritation. Contains a recognized carcinogen.

**Date of MSDS Preparation:**

**Day:** 23

**Month:** June

**Year:** 2009

### 2. COMPOSITION / INFORMATION ON INGREDIENTS

#### Demineralized Water

**CAS No.:** 7732-18-5

**TSCA CAS Number:** 7732-18-5

**Percent Range:** 90.0 - 100.0

**Percent Range Units:** volume / volume

**LD50:** None reported

**LC50:** None reported

**TLV:** Not established

**PEL:** Not established

**Hazard:** No effects anticipated.

#### Other component

**CAS No.:** Not applicable

**TSCA CAS Number:** Not applicable

**Percent Range:** 0.01 - 0.1

**Percent Range Units:** weight / weight

**LD50:** Not applicable

**LC50:** Not applicable

**TLV:** Not established

**PEL:** Not established

**Hazard:** Any ingredient(s) of this product listed as "Other component(s)" is not considered a health hazard to the user of this product.

#### Sulfuric Acid

**CAS No.:** 7664-93-9

**TSCA CAS Number:** 7664-93-9

**Percent Range:** 1.0 - 5.0

**Percent Range Units:** weight / volume

**LD50:** Oral rat LD50 = 2140 mg/kg.

**LC50:** Inhalation rat LC50 = 87 ppm/4 hr

**TLV:** 1 mg/m<sup>3</sup> (TWA); 3 mg/m<sup>3</sup> (STEL)

**PEL:** 1 mg/m<sup>3</sup>

**Hazard:** Causes severe burns. Harmful if inhaled. Recognized carcinogen.

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### 3. HAZARDS IDENTIFICATION

**Emergency Overview:**

**Appearance:** Clear, colorless liquid

**Odor:** None

CAUSES EYE BURNS MAY CAUSE RESPIRATORY TRACT IRRITATION

CANCER HAZARD CONTAINS SULFURIC ACID WHICH CAN CAUSE CANCER

**HMIS:**

**Health:** 3

**Flammability:** 0

**Reactivity:** 1

**Protective Equipment:** X - See protective equipment, Section 8.

**NFPA:**

**Health:** 3

**Flammability:** 0

**Reactivity:** 1

**Symbol:** Not applicable

**Potential Health Effects:**

**Eye Contact:** Causes eye burns.

**Skin Contact:** May cause irritation

**Skin Absorption:** None reported

**Target Organs:** None reported

**Ingestion:** May cause: irritation of the mouth and esophagus

**Target Organs:** None reported

**Inhalation:** May cause: respiratory tract irritation difficult breathing mouth soreness teeth erosion

**Target Organs:** Lungs

**Medical Conditions Aggravated:** Pre-existing: Eye conditions Respiratory conditions

**Chronic Effects:** Chronic overexposure may cause cancer

**Cancer / Reproductive Toxicity Information:**

This product does NOT contain any OSHA listed carcinogens.

An ingredient of this mixture is: IARC Group 1: Recognized Carcinogen

Sulfuric Acid - The IARC evaluation was based on exposure to the mist or vapor of concentrated sulfuric acid generated during chemical processes.

This product does NOT contain any NTP listed chemicals.

**Additional Cancer / Reproductive Toxicity Information:** None reported

**Toxicologically Synergistic Products:** None reported

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### 4. FIRST AID

**Eye Contact:** Immediately flush eyes with water for 15 minutes. Call physician.

**Skin Contact (First Aid):** Wash skin with plenty of water for 15 minutes. Call physician immediately.

**Ingestion (First Aid):** Do not induce vomiting. Give 1-2 glasses of water. Never give anything by mouth to an unconscious person. Call physician immediately.

**Inhalation:** Remove to fresh air.

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### 5. FIRE FIGHTING MEASURES

**Flammable Properties:** Material will not burn. During a fire, corrosive and toxic gases may be generated by thermal decomposition.

**Flash Point:** Not applicable

**Method:** Not applicable

**Flammability Limits:**

**Lower Explosion Limits:** Not applicable  
**Upper Explosion Limits:** Not applicable  
**Autoignition Temperature:** Not applicable  
**Hazardous Combustion Products:** This material will not burn.  
**Fire / Explosion Hazards:** None reported  
**Static Discharge:** None reported.  
**Mechanical Impact:** None reported  
**Extinguishing Media:** Use media appropriate to surrounding fire conditions  
**Fire Fighting Instruction:** As in any fire, wear self-contained breathing apparatus pressure-demand and full protective gear. Evacuate area and fight fire from a safe distance.

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## 6. ACCIDENTAL RELEASE MEASURES

### ***Spill Response Notice:***

Only persons properly qualified to respond to an emergency involving hazardous substances may respond to a spill according to federal regulations (OSHA 29 CFR 1910.120(a)(v)) and per your company's emergency response plan and guidelines/procedures. See Section 13, Special Instructions for disposal assistance.

**Containment Technique:** Absorb spilled liquid with non-reactive sorbent material. Stop spilled material from being released to the environment.

**Clean-up Technique:** Cover spilled material with an alkali, such as soda ash or sodium bicarbonate. Scoop up slurry into a large beaker. Adjust to a pH between 6 and 9. Use sulfuric or citric acid to lower pH. Use soda ash or sodium bicarbonate to increase pH. Flush reacted material to the drain with a large excess of water. Decontaminate the area of the spill with a soap solution.

**Evacuation Procedure:** Evacuate local area (15 foot radius or as directed by your facility's emergency response plan) when: a gallon or more of liquid is spilled. If conditions warrant, increase the size of the evacuation.

**Special Instructions (for accidental release):** Mixture contains a component which is regulated as a water pollutant. Product is regulated as RCRA hazardous waste.

**304 EHS RQ (40 CFR 355):** Sulfuric Acid - RQ 1000 lbs.

**D.O.T. Emergency Response Guide Number:** 154

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## 7. HANDLING / STORAGE

**Handling:** Avoid contact with eyes. Do not breathe mist or vapors. Wash thoroughly after handling. Maintain general industrial hygiene practices when using this product.

**Storage:** Keep container tightly closed when not in use. Store between 10° and 25°C.

**Flammability Class:** Not applicable

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## 8. EXPOSURE CONTROLS / PROTECTIVE EQUIPMENT

**Engineering Controls:** Have an eyewash station nearby. Maintain general industrial hygiene practices when using this product.

### ***Personal Protective Equipment:***

**Eye Protection:** safety glasses with top and side shields

**Skin Protection:** lab coat disposable latex gloves

**Inhalation Protection:** adequate ventilation

**Precautionary Measures:** Avoid contact with: eyes. Do not breathe: mist/vapor. Wash thoroughly after handling.

**TLV:** Not established

**PEL:** Not established

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## 9. PHYSICAL / CHEMICAL PROPERTIES

**Appearance:** Clear, colorless liquid

**Physical State:** Liquid

**Molecular Weight:** Not applicable

**Odor:** None

**pH:** < 1

**Vapor Pressure:** Not determined

**Vapor Density (air = 1):** Not determined

**Boiling Point:** ~ 100°C (212°F)  
**Melting Point:** Not determined  
**Specific Gravity (water = 1):** 0.990  
**Evaporation Rate (water = 1):** 0.56  
**Volatile Organic Compounds Content:** Not applicable  
**Partition Coefficient (n-octanol / water):** Not applicable  
**Solubility:**  
    **Water:** Miscible  
    **Acid:** Miscible  
    **Other:** Not determined  
**Metal Corrosivity:**  
    **Steel:** 0.552 in/yr (14.0 mm/yr)  
    **Aluminum:** 0.234 in/yr (5.94 mm/yr)

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## 10. STABILITY / REACTIVITY

**Chemical Stability:** Stable when stored under proper conditions.  
**Conditions to Avoid:** Extreme temperatures Heating to decomposition.  
**Reactivity / Incompatibility:** Incompatible with: caustics  
**Hazardous Decomposition:** Heating to decomposition releases toxic and/or corrosive fumes of: sulfur oxides  
**Hazardous Polymerization:** Will not occur.

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## 11. TOXICOLOGICAL INFORMATION

**Product Toxicological Data:**  
    **LD50:** None reported  
    **LC50:** None reported  
    **Dermal Toxicity Data:** None reported  
    **Skin and Eye Irritation Data:** None reported  
    **Mutation Data:** None reported  
    **Reproductive Effects Data:** None reported  
    **Ingredient Toxicological Data:** Sulfuric Acid: Oral rat LD<sub>50</sub> = 2140 mg/kg; Inhalation rat LC<sub>50</sub> = 347 ppm/1 hr.

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## 12. ECOLOGICAL INFORMATION

**Product Ecological Information:** --  
No ecological data available for this product.  
**Ingredient Ecological Information:** --  
No ecological data available for the ingredients of this product.

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## 13. DISPOSAL CONSIDERATIONS

**EPA Waste ID Number:** D002  
**Special Instructions (Disposal):** Work in an approved fume hood. Dilute material with excess water making a weaker than 5% solution. Adjust to a pH between 6 and 9 with an alkali, such as soda ash or sodium bicarbonate. Open cold water tap completely, slowly pour the reacted material to the drain. Allow cold water to run for 5 minutes to completely flush the system.  
**Empty Containers:** Rinse three times with an appropriate solvent. Dispose of empty container as normal trash. Rinsate from empty containers may contain sufficient product to require disposal as hazardous waste.  
**NOTICE (Disposal):** These disposal guidelines are based on federal regulations and may be superseded by more stringent state or local requirements. Please consult your local environmental regulators for more information.

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## 14. TRANSPORT INFORMATION

**D.O.T.:**  
**D.O.T. Proper Shipping Name:** Corrosive Liquid, Acidic, Inorganic, N.O.S.

(<10% Sulphuric Acid in Solution)

**DOT Hazard Class:** 8

**DOT Subsidiary Risk:** NA

**DOT ID Number:** UN3264

**DOT Packing Group:** III

**I.C.A.O.:**

**I.C.A.O. Proper Shipping Name:** Corrosive Liquid, Acidic, Inorganic, N.O.S.

(<10% Sulphuric Acid in Solution)

**ICAO Hazard Class:** 8

**ICAO Subsidiary Risk:** NA

**ICAO ID Number:** UN3264

**ICAO Packing Group:** III

**I.M.O.:**

**I.M.O. Proper Shipping Name:** Corrosive Liquid, Acidic, Inorganic, N.O.S.

(<10% Sulphuric Acid in Solution)

**I.M.O. Hazard Class:** 8

**I.M.O. Subsidiary Risk:** NA

**I.M.O. ID Number:** UN3264

**I.M.O. Packing Group:** III

**Additional Information:** There is a possibility that this product could be contained in a reagent set or kit composed of various compatible dangerous goods. If the item is NOT in a set or kit, the classification given above applies. If the item IS part of a set or kit, the classification would change to the following: UN3316 Chemical Kit, Class 9, PG II or III. If the item is not regulated, the Chemical Kit classification does not apply.

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## 15. REGULATORY INFORMATION

**U.S. Federal Regulations:**

**O.S.H.A.:** This product meets the criteria for a hazardous substance as defined in the Hazard Communication Standard. (29 CFR 1910.1200)

**E.P.A.:**

**S.A.R.A. Title III Section 311/312 Categorization (40 CFR 370):** Immediate (Acute) Health Hazard Delayed (Chronic) Health Hazard

**S.A.R.A. Title III Section 313 (40 CFR 372):** This product contains a chemical(s) subject to the reporting requirements of Section 313 of Title III of SARA.

Sulfuric acid (acid aerosols including mists, vapors, gas, fog, and other airborne forms of any particle size.)

**302 (EHS) TPQ (40 CFR 355):** Sulfuric Acid 1000 lbs.

**304 CERCLA RQ (40 CFR 302.4):** Sulfuric Acid 1000 lbs.

**304 EHS RQ (40 CFR 355):** Sulfuric Acid - RQ 1000 lbs.

**Clean Water Act (40 CFR 116.4):** Sulfuric acid - RQ 1000 lbs.

**RCRA:** Contains RCRA regulated substances. See Section 13, EPA Waste ID Number.

**C.P.S.C.:** Not applicable

**State Regulations:**

**California Prop. 65:** No Prop. 65 listed chemicals are present in this product.

**Identification of Prop. 65 Ingredient(s):** None

**California Perchlorate Rule CCR Title 22 Chap 33:**

**Trade Secret Registry:** Not applicable

**National Inventories:**

**U.S. Inventory Status:** All ingredients in this product are listed on the TSCA 8(b) Inventory (40 CFR 710).

**TSCA CAS Number:** Not applicable

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## 16. OTHER INFORMATION

**Intended Use:** Standard solution

**References:** 29 CFR 1900 - 1910 (Code of Federal Regulations - Labor). Air Contaminants, Federal Register, Vol. 54, No. 12, Thursday, January 19, 1989. pp. 2332-2983. CCINFO RTECS. Canadian Centre for Occupational Health and Safety. Hamilton, Ontario Canada: 30 June 1993. IARC Monographs on the Evaluation of the Carcinogenic Risks to Humans. World Health Organization (Volumes 1-42) Supplement 7. France: 1987. List of Dangerous Substances Classified in Annex I of the EEC Directive (67/548) - Classification, Packaging and Labeling of Dangerous Substances,

Amended July 1992. Outside Testing. Sixth Annual Report on Carcinogens, 1991. U.S. Department of Health and Human Services. Rockville, MD: Technical Resources, Inc. 1991. Technical Judgment. TLV's Threshold Limit Values and Biological Exposure Indices for 1992-1993. American Conference of Governmental Industrial Hygienists, 1992.

**Revision Summary:** Updates in Section(s) 15,

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**Legend:**

NA - Not Applicable	w/w - weight/weight
ND - Not Determined	w/v - weight/volume
NV - Not Available	v/v - volume/volume

**USER RESPONSIBILITY:** Each user should read and understand this information and incorporate it in individual site safety programs in accordance with applicable hazard communication standards and regulations.

**THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED TO BE ACCURATE.  
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