

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

MSDS No: M00437

# Material Safety Data Sheet

## 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**Product Name:** Sulfuric Acid Standard Solution, 5.25 N  
**Catalog Number:** 244932

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:** M00437  
**Chemical Name:** Not applicable  
**CAS No.:** Not applicable  
**Chemical Formula:** Not applicable  
**Chemical Family:** Not applicable  
**Hazard:** Harmful if inhaled. Carcinogen. Causes eye burns.  
**Date of MSDS Preparation:**  
**Day:** 3  
**Month:** 05  
**Year:** 2002

## 2. COMPOSITION / INFORMATION ON INGREDIENTS

### Demineralized Water

**CAS No.:** 7732185  
**TSCA CAS Number:** 7732-18-5  
**Percent Range:** 70.0 - 80.0  
**Percent Range Units:** weight / weight  
**LD50:** None reported  
**LC50:** None reported  
**TLV:** Not established  
**PEL:** Not established  
**Hazard:** No effects anticipated.

### Sulfuric Acid

**CAS No.:** 7664939  
**TSCA CAS Number:** 7664-93-9  
**Percent Range:** 20.0 - 30.0  
**Percent Range Units:** weight / weight  
**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.

## 3. HAZARDS IDENTIFICATION

### **Emergency Overview:**

**Appearance:** Clear, colorless liquid  
**Odor:** None

CAUSES EYE BURNS HARMFUL IF INHALED MAY CAUSE SKIN IRRITATION

**HMIS:**

**Health:** 3

**Flammability:** 0

**Reactivity:** 2

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

**NFPA:**

**Health:** 3

**Flammability:** 0

**Reactivity:** 2

**Symbol:** Water Reactive

**Potential Health Effects:**

**Eye Contact:** Causes severe burns

**Skin Contact:** May cause irritation

**Skin Absorption:** None reported

**Target Organs:** None reported

**Ingestion:** Causes: severe burns May cause: circulatory disturbances diarrhea nausea vomiting rapid pulse and respirations

**Target Organs:** None reported

**Inhalation:** Causes: severe burns May cause: teeth erosion mouth soreness difficult breathing

**Target Organs:** Lungs

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

**Chronic Effects:** Chronic overexposure may cause erosion of the teeth chronic irritation or inflammation of the lungs 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. Remove contaminated clothing. 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. Give artificial respiration if necessary. Call physician.

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## 5. FIRE FIGHTING MEASURES

**Flammable Properties:** Not Flammable, but reacts with most metals to form flammable hydrogen gas. 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:** Contact with metals gives off hydrogen gas which is flammable May react violently with: strong bases water

**Static Discharge:** None reported.

**Mechanical Impact:** None reported

**Extinguishing Media:** Dry chemical. Do NOT use water.

**Fire Fighting Instruction:** As in any fire, wear self-contained breathing apparatus pressure-demand and full protective gear.

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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 with an alkali, such as soda ash or sodium bicarbonate. Dispose of material in an E.P.A. approved hazardous waste facility. 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: any quantity 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. Mixture contains a component which is regulated as 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 skin clothing Do not breathe mist or vapors. Wash thoroughly after handling. Use with adequate ventilation. Maintain general industrial hygiene practices when using this product.

**Storage:** Keep container tightly closed when not in use. Protect from: heat Keep away from: alkalis oxidizers reducers metals

**Flammability Class:** Not applicable

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## 8. EXPOSURE CONTROLS / PROTECTIVE EQUIPMENT

**Engineering Controls:** Have an eyewash station nearby. Have a safety shower nearby. Maintain general industrial hygiene practices when using this product. Use a fume hood to avoid exposure to dust, mist or vapor.

**Personal Protective Equipment:**

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

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

**Inhalation Protection:** adequate ventilation

**Precautionary Measures:** Avoid contact with: eyes skin clothing Do not breathe: mist/vapor Wash thoroughly after handling. Use with adequate ventilation. Protect from: heat Keep away from: alkalis metals oxidizers reducers

**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:** < 0.5

**Vapor Pressure:** Not determined.

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

**Boiling Point:** Not determined.

**Melting Point:** Not applicable

**Specific Gravity (water = 1):** 1.149

**Evaporation Rate (water = 1):** 0.85

**Volatile Organic Compounds Content:** None.

**Partition Coefficient (n-octanol / water):** Not applicable

**Solubility:**

**Water:** Miscible.

**Acid:** Miscible.

**Other:** Not determined.  
**Metal Corrosivity:**  
**Steel:** 0.230 in/yr (5.842 mm/yr)  
**Aluminum:** >0.25 in/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:** May react violently in contact with: strong bases oxidizers reducers Incompatible with: metals  
**Hazardous Decomposition:** Heating to decomposition releases toxic and/or corrosive fumes of: sulfur oxides Contact with metals may release flammable hydrogen gas.  
**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:** This product is not corrosive to skin. Absent to very slight erythema. No edema. (OECD Number 404, Acute Dermal Irritation/Corrosion)  
**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/1hr.

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## 12. ECOLOGICAL INFORMATION

**Product Ecological Information:--**  
No ecological data available for this product.  
**Ingredient Ecological Information:** Sulfuric Acid: The 48-Hour TLM in flounder is 100-300 ppm.

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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.  
**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.  
(<45% Sulfuric 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.  
(<45% Sulfuric 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.  
(<45% Sulfuric 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

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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 Reactive Delayed (Chronic) Health Hazard

**S.A.R.A. Title III Section 313 (40 CFR 372):** This product does NOT contain any chemical subject to the reporting requirements of Section 313 of Title III of SARA.

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**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.:** The label for this product bears the signal word "POISON" because the concentration of Sulfuric Acid in the product is greater than/equal to 10%.

**State Regulations:**

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

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

**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:** Laboratory Reagent

**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. 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.

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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. HOWEVER, NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THESE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF.**

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