

The following list contains the Material Safety Data Sheets you requested. Please scroll down to view the requested MSDS(s).

Product	MSDS	Distributor	Format	Language	Quantity
2612520	N/A	Hach Company	ROWGHS	English	1

Total Enclosures: 1

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

MSDS No: M01334

MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: Oxidation-Reduction Potential Standard Light's Solution

Catalog Number: 2612520

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: M01334

Chemical Name: Not applicable

CAS Number: Not applicable

Additional CAS No. (for hydrated forms): Not applicable

Chemical Formula: Not applicable

Chemical Family: Not applicable

Intended Use: Determination of volatile acids

2. HAZARDS IDENTIFICATION

GHS Classification:

Hazard categories: Corrosive to Metals: Met. Corr. 1 Skin Corrosion/Irritation: Skin Corr. 1A

GHS Label Elements:



Hazard statements: May be corrosive to metals. Causes severe skin burns and eye damage.

Precautionary statements: Keep only in original container. Immediately call a POISON CENTER or doctor/physician. Wash contaminated clothing before reuse. Absorb spillage to prevent material damage. P406 Store in corrosive resistant container with a resistant inner liner. Dispose of contents/container according to state, local, federal or national regulations. Do not breathe dust/fume/gas/mist/vapours/spray. Wash thoroughly after handling. Wear eye protection. IF SWALLOWED: rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. IF INHALED: Remove victim/person to fresh air and keep at rest in a position comfortable for breathing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

HMIS:

Health: 4

Flammability: 0

Reactivity: 0

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

NFPA:

Health: 3

Flammability: 0

Reactivity: 0

Symbol: Not applicable

WHMIS Hazard Classification: Class E - Corrosive material Class D, Division 2, Subdivision A - Very toxic materials (other toxic effects) Class D, Division 1, Subdivision B - Toxic material (immediate effects)

WHMIS Symbols: Corrosive Acute Poison

3. COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous Components according to GHS:

Sulfuric Acid

CAS Number: 7664-93-9

Chemical Formula: H_2SO_4

GHS Classification: Met. Corr. 1 H290; Skin Corr. 1A, H314; Aquatic Acute 3, H402

Percent Range: 5.0 - 15.0

Percent Range Units: weight / weight

PEL: 1 mg/m^3

TLV: 1 mg/m^3

WHMIS Symbols: Acute Poison Corrosive

Ferric Ammonium Sulfate

CAS Number: 10138-04-2

Chemical Formula: $\text{FeH}_4\text{NO}_8\text{S}_2 \cdot 12 \text{ H}_2\text{O}$

GHS Classification:

Percent Range: 1.0 - 5.0

Percent Range Units: weight / weight

PEL: Not established

TLV: 1 mg/m^3 (as Fe)

WHMIS Symbols: Not applicable

Ferrous Ammonium Sulfate

CAS Number: 10045-89-3

Chemical Formula: $\text{Fe}(\text{NH}_4)_2(\text{SO}_4)_2 \cdot 6 \text{ H}_2\text{O}$

GHS Classification: Acute Tox. Or. 5, H303

Percent Range: 1.0 - 5.0

Percent Range Units: weight / weight

PEL: Not established

TLV: 1 mg/m^3 (Fe)

WHMIS Symbols: Not applicable

Hazardous Components according to GHS: No

Demineralized Water

CAS Number: 7732-18-5

Chemical Formula: H_2O

GHS Classification: Not hazardous

Percent Range: 75.0 - 85.0

Percent Range Units: weight / weight

PEL: Not established

TLV: Not established

WHMIS Symbols: Not applicable

4. FIRST AID MEASURES

General Information: In the event of exposure, show this Material Safety Data Sheet and label (where possible) to a doctor.

Advice to doctor: Treat symptomatically.

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

Skin Contact (First Aid): Wash skin with plenty of water. Call physician if irritation develops.

Inhalation: Remove to fresh air.

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

5. FIRE FIGHTING MEASURES

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

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.

Extinguishing Media: Use media appropriate to surrounding fire conditions

Extinguishing Media NOT To Be Used: Not applicable

Fire / Explosion Hazards: This product will not burn or explode.

Hazardous Combustion Products: This material will not burn.

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. Outside of the US, only persons properly qualified according to state or local regulations should respond to a spill involving chemicals.

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. Dilute with a large excess of water. 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: any quantity is spilled.

DOT Emergency Response Guide Number: 154

7. HANDLING AND STORAGE

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

Storage: Store in a cool, dry place.

Flammability Class: Not applicable

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls: Have an eyewash station nearby. Use general ventilation to minimize exposure to mist, vapor or dust. Maintain general industrial hygiene practices when using this product.

Personal Protective Equipment:

Eye Protection: chemical splash goggles

Skin Protection: disposable latex gloves. In the EU, the selected gloves must satisfy the specifications of EU Directive 89/686/EEC and standard EN 374 derived from it. lab coat

Inhalation Protection: adequate ventilation

Precautionary Measures: Avoid contact with: eyes. Do not breathe: mist/vapor. Use with adequate ventilation. Protect from: heat

TLV: Not established

PEL: Not established

For Occupational Exposure Limits (OEL) for ingredients, see section 3 - Composition/Information on Ingredients.:

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Clear, yellow liquid

Physical State: Liquid

Molecular Weight: Not applicable

Odor: Not determined

Odor Threshold: Not determined

pH: < 0.5

Metal Corrosivity:

Corrosivity Classification: Classified as corrosive to metals.

Steel: 0.683 in/yr (17.3 mm/yr)
Aluminum: 0.393 in/yr (9.98 mm/yr)
Specific Gravity/ Relative Density (water = 1; air =1): 1.10
Viscosity:
Solubility:
Water: Miscible
Acid: Miscible
Other: Not determined
Partition Coefficient (n-octanol / water): Not applicable
Coefficient of Water / Oil: Not applicable
Melting Point: Not determined
Decomposition Temperature:
Boiling Point: ~ 100°C (212°F)
Vapor Pressure: Not determined
Vapor Density (air = 1): Not determined
Evaporation Rate (water = 1): Not determined
Volatile Organic Compounds Content: Not applicable
Flammable Properties: During a fire, irritating and highly toxic gases may be generated by thermal decomposition. Material will not burn.
Flash Point: Not applicable
Method: Not applicable
Flammability Limits:
Lower Explosion Limits: Not applicable
Upper Explosion Limits: Not applicable
Autoignition Temperature: Not applicable
Explosive Properties:
Oxidizing Properties:
Reactivity Properties:
Gas under Pressure:
Not classified according to GHS criteria.

10. STABILITY AND REACTIVITY

Chemical Stability: Stable when stored under proper conditions.
Mechanical Impact: None reported
Static Discharge: None reported.
Reactivity / Incompatibility: Incompatible with: alkalies oxidizers reducers
Hazardous Decomposition: Heating to decomposition releases toxic and/or corrosive fumes of: sulfur oxides
Conditions to Avoid: Extreme temperatures Heating to decomposition.

11. TOXICOLOGICAL INFORMATION

Toxicokinetics, Metabolism and Distribution: No information available for mixture.
Toxicologically Synergistic Products: None reported
Acute Toxicity: Acute Toxicity Estimate (ATE) - Calculated from Ingredient Toxicity Data
Specific Target Organ Toxicity - Single Exposure (STOT-SE): Based on classification principles, the classification criteria are not met.
Specific Target Organ Toxicity - Repeat Exposure (STOT-RE): Based on classification principles, the classification criteria are not met.
Skin Corrosion/Irritation: Corrosive to skin.
Eye Damage: Corrosive to eyes.
Sensitization: Based on classification principles, the classification criteria are not met.
CMR Effects/Properties (carcinogenic, mutagenic or toxic to reproduction): Contains Listed Carcinogen
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.
This product does NOT contain any OSHA listed carcinogens.
Symptoms/Effects:
Ingestion: Causes: irritation of the mouth and esophagus May cause: vomiting diarrhea Iron poisoning is indicated by pink urine discoloration. Iron poisoning has resulted in liver damage, coma and death.

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

Skin Absorption: None Reported

Chronic Effects: Chronic overexposure may cause erosion of the teeth chronic irritation or inflammation of the lungs cancer

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

12. ECOLOGICAL INFORMATION

Product Ecological Information: --

No ecological data available for this product.

Ingredient Ecological Information:

13. DISPOSAL CONSIDERATIONS

EPA Waste ID Number: D002

Special Instructions (Disposal): Work in an approved fume hood. Dilute to 3 to 5 times the volume with cold water. 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. In Europe: Chemical and analysis solutions must be disposed of in compliance with the respective national regulations. Product packaging must be disposed of in compliance with the country-specific regulations or must be passed to a packaging return system.

14. TRANSPORT INFORMATION

D.O.T.:

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

(<10% Sulphuric Acid in Solution)

Hazard Class: 8

Subsidiary Risk: NA

ID Number: UN3264

Packing Group: III

T.D.G.:

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

(<10% Sulphuric Acid in Solution)

Hazard Class: 8

Subsidiary Risk: NA

UN Number/PIN: 3264

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)

Hazard Class: 8

Subsidiary Risk: NA

ID Number: UN3264

Packing Group: III

I.M.O.:

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

(<10% Sulphuric Acid in Solution)

Hazard Class: 8

Subsidiary Risk: NA

ID Number: UN3264

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.

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 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.

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: Not applicable

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).

CAS Number: Not applicable

Canadian Inventory Status: All ingredients of this product are DSL Listed.

EEC Inventory Status: All ingredients used to make this product are listed on EINECS / ELINCS.

Australian Inventory (AICS) Status: All ingredients are listed.

New Zealand Inventory (NZIoC) Status: All components either listed or exempt.

Korean Inventory (KECI) Status: All components of this product are either listed, listed as the anhydrous compound or exempt.

Japan (ENCs) Inventory Status: Listed - See anhydrous Chemical Abstract (CAS) Registry Number

China (PRC) Inventory (MEP) Status: All components either listed or exempt.

16. OTHER INFORMATION

References: TLV's Threshold Limit Values and Biological Exposure Indices for 1992-1993. American Conference of Governmental Industrial Hygienists, 1992. In-house information. Technical Judgment. Air Contaminants, Federal Register, Vol. 54, No. 12. Thursday, January 19, 1989. pp. 2332-2983. Vendor Information. IARC Monographs on the Evaluation of the Carcinogenic Risks to Humans. World Health Organization (Volumes 1-42) Supplement 7. France: 1987.

Complete Text of H phrases referred to in Section 3: H290 May be corrosive to metals. . H314 Causes severe skin burns and eye damage. H315 Causes skin irritation. H319 Causes serious eye irritation. H335 May cause respiratory irritation.

Revision Summary: . Substantial revision to comply with EU Reg 1272/2008, Reg 1907/2006 and UN GHS (ST/SG/AC.10/36/Add.3).

Date of MSDS Preparation:

Day: 29

Month: October

Year: 2012

MSDS Prepared: MSDS prepared by Product Compliance Department extension 3350

CCOHS Evaluation Note: It is offered under exemption from WHMIS labeling as specified in the Controlled Products Regulation (CPR) Section 17. It is offered under the interim policy that was established by Health Canada permitting use of GHS-formatted safety data sheets in Canada prior to revision of CPR to GHS. This product has been classified and labeled in accordance with the requirements of GHS (ST/SG/AC.10/36/Add.3). This SDS has been prepared in accordance with the requirements of GHS (ST/SG/AC.10/36/Add.3).

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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