

SECTION 1 - IDENTIFICATION

Product Identifier: Meras Sulfuric Acid 93%

Product Use: AG Micro-irrigation Treatment

Common Names: Sulfuric Acid

Meras Engineering, Inc.
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San Francisco, CA 94102
USA
(415)240-4918
orders@meras.com

24 Hr. Emergency #: ChemTrec (800) 424-9300

SECTION 2 - HAZARDS IDENTIFICATION

Classification of the Substance or Mixture:
Acute Toxicity, Oral – Category 3
Skin Corrosion – Category 1A
Serious Eye Damage – Category 1
Specific Target Organ Toxicity, Single Exposure – Category 3, Respiratory system



Signal Word: DANGER

Hazard Statement(s):
H301: Toxic if swallowed.
H314: Causes severe skin burns and eye damage.
H318: Causes serious eye damage.
H335: May cause respiratory irritation.
H402: Harmful to aquatic life.

Precautionary Statements:
Prevention-
P261: Avoid breathing dust/fumes/gas/mist/vapors/spray.
P262: Do not get in eyes, on skin, or on clothing.
P264: Wash skin thoroughly after handling.
P270: Do not eat, drink or smoke when using this product.
P273: Avoid release to the environment.
P280: Wear protective gloves/protective clothing/eye protection/face protection.

Response-
P301+330+331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303+361+353: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+340: IF INHALED: Remove person to fresh air and keep at rest in a position comfortable for breathing.
P305+351+338: IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.
P310: Immediately call a POISON CENTER or doctor/physician.
P363: Wash contaminated clothing before reuse.

Storage-
P403+233: Store in a well ventilated place. Keep container tightly closed.
P405: Store locked up.

Disposal-
P501: Dispose of contents/container to an approved waste disposal plant.

SECTION 3 - COMPOSITION / INFORMATION ON INGREDIENTS

Ingredient(s)	CAS No.	Concentration (%)
Sulfuric Acid	7664-93-9	93%

SECTION 4 - FIRST-AID MEASURES

Inhalation:	Move person to fresh air. In case of unconsciousness, place patient stably in side position for transportation.
Skin Contact:	In case of contact, immediately flush skin with plenty of water for at least 30 minutes. Remove all contaminated apparel under the shower. Wash off with plenty of water. Do not attempt to neutralize with chemical agents Immediate medical attention is required.
Eye Contact:	Rinse opened eye for at least 30 minutes under running water. Call a physician.
Ingestion:	Do NOT induce vomiting; immediately call for medical help. Rinse mouth with water. Immediately call a doctor.
Most Important Symptoms And Effects, Both Acute And Delayed:	Inhalation of product may aggravate existing chronic respiratory problems such as asthma, emphysema or bronchitis Skin contact may aggravate existing skin disease
Indication Of Any Immediate Medical Attention And Special Treatment Needed:	All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

SECTION 5 - FIRE-FIGHTING MEASURES

Suitable Extinguishing Equipment:	Dry Chemical DO NOT USE WATER.
Special Hazards Arising From The Substance Or Mixture:	Not combustible. Strong oxidizer. Contact with other material may cause fire. Reacts violently with water. Corrosive or suffocating vapors are released. On combustion or on thermal decomposition (pyrolysis), releases: Sulfur oxides Sulfuric acid reacts with metals, especially when diluted with water. This reaction produces highly flammable hydrogen gas, which may explode when ignited, especially in confined spaces.
Special Protective Equipment And Precautions For Firefighters:	Wear acid protective clothing. Firefighters should wear an approved self-contained breathing apparatus (SCBA). Use water spray to cool unopened containers. Use caution. See Section 7 for more information on safe handling. See Section 8 for more information on personal protection equipment. See Section 13 for disposal information.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment, And Emergency Procedures:	Wear appropriate PPE. Use respirator if thresholds are exceeded. Keep from contacting skin or eyes. Ensure adequate ventilation. Evacuate personnel to safe areas. Stay upwind of spilled material.
Environmental Precautions:	Prevent further release (leakage/spillage) if safe to do so. Do not allow product to enter drains. Do not allow to drain to environment.
Methods And Materials For Containments And Cleaning Up:	Absorb with materials such as dry sand, inert earth, or a dry acid neutralizer. Do not use combustible material. Place contaminated material into suitable, closed containers for disposal. Dispose of contaminated material according to Section 13. Ensure adequate ventilation. Carefully neutralize the remainder using: soda ash Soak up with inert absorbent material. Scrape up.
Reference To Other Sections:	See Section 7 for information on safe handling. See Section 8 for information on personal protection equipment. See Section 13 for information on proper disposal.

SECTION 7 - HANDLING AND STORAGE

Handling Precautions: Avoid contact with eyes, skin, or clothing.
 Do not ingest.
 Use approved containers only.
 Keep containers closed when not in use.
 Keep ignition sources away.
 Do not expose containers to open flame, excessive heat, or direct sunlight.
 Do not puncture or drop containers.
 Handle with care and avoid spillage on the floor.
 Keep material out of reach of children.
 Keep material away from incompatible materials.
 Wash thoroughly after handling.
 Ensure adequate ventilation.
 Add product to water, do not add water to the product.

Storage Requirements: Keep container tightly closed.
 Store in a well-ventilated place.
 Do not store in direct sunlight.
 Store below 104°F.

Incompatible Materials: Water. Strong reducing agents. Halogenated compounds. Bases. Metals. Nitrogen oxides (NOx).

SECTION 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Limits:

Component(s)	CAS No.	PEL	OSHA Ceiling	STEL	NIOSH REL Ceiling	ACGIH TLV Ceiling
Sulfuric Acid (IDHL: 15 mg/m ³)	7664-93-9	0.1 mg/m ³		3 mg/m ³	1 mg/m ³	0.2 mg/m ³

Engineering Controls:
 All ventilation should be designed in accordance with OSHA standard (29 CFR 1910.94).
 Use local exhaust at filling zones and where leakage and dust formation is probable. Use mechanical (general) ventilation for storage areas.
 Use appropriate ventilation as required to keep Exposure Limits in Air below TLV & PEL limits.

Personal Protective Equipment:
 All safety equipment should be tested and approved under appropriate government standards such as NIOSH (US) or EN 166 (EU). Type of protective equipment should be selected based on concentration amount and conditions of use of this material. Full-face vapor respirator may be required as backup to engineering controls when proper engineering controls are not in place to keep TLV and PEL limits below defined thresholds. Respiratory protection must comply with 29 CFR 1910.134.

- Eye/Face-**
- Safety goggles (chemical-resistant)
 - Face shield if splashing is possible.
- Skin/Body-**
- Gloves (PVC, neoprene, or nitrile)
 - Acid-resistant protective clothing
 - Acid-resistant boots
- Respiratory-**
- Air-purifying respirator, if thresholds are exceeded. *Recommended filter type: acidic gas/vapor type.*
- General Hygiene Considerations-**
- Handle in accordance with good industrial hygiene and safety practice.
 - Keep away from foodstuffs, beverages, and feed.
 - Wash face, hands, and any exposed skin thoroughly after handling.
 - Appropriately dispose of contaminated clothing; wash before re-use, if applicable.
 - Avoid contact with eyes, skin, and clothing.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Form: Liquid	Vapor Pressure (Mm Hg): <0.001 Mm Hg @ 68°F
Color: Clear to brown	Vapor Density: 3.38 (air = 1)
Odor: Odorless	Relative Density: 15.3 lbs/gal

pH: <1
Melting/Freezing Point: 50°F
Initial Boiling Point and Boiling Range: 554-640.4°F
Flash Point: No data available.
Evaporation Rate: Slower than ether.
Flammability (Solid, Gas): No data available.
Upper/Lower Flammability or Explosive Limits: No data available.

Specific Gravity: 1.84
Solubility in Water: No data available.
Partition Coefficient (N-Octanol/Water): No data available.
Auto Ignition Temperature: N/A
Decomposition Temperature: 644°F
Viscosity: No data available.
Volatiles (% By Weight): No data available.
Volatile Organic Compounds (VOC's): No data available.

SECTION 10 - STABILITY AND REACTIVITY

Reactivity: Not reactive under normal and ambient conditions
Chemical Stability: Stable under normal and ambient conditions.
Possibility of Hazardous Reactions: Reacts exothermically with water. Hygroscopic.
Conditions to Avoid: Incompatibilities, flames, ignition sources, exposure to water or moisture.
Incompatible Materials: Water, organic materials, strong acids, strong bases, metals, alcohols, cyanides, sulfides.
Hazardous Decomposition Products: Sulfur oxides, hydrogen.

SECTION 11 - TOXICOLOGICAL INFORMATION

Routes of Entry: Eyes, skin, ingestion

Acute Toxicity:
 Oral Toxicity (LD₅₀)- >2,140 mg/kg (Rat)
 Inhalation Toxicity (LC₅₀)- 510 mg/m³ (Rat)(2 hr)

Primary Eye Irritation: Severe corrosion
Primary Skin Irritation: Severe corrosion

Sensitization: No data available.

Carcinogenicity:
 IARC- Group 1: Carcinogenic to humans.
 ACGIH- A2: Suspected human carcinogen.
 NTP- Known: Known Carcinogen.
 OSHA- No data available.

Reproductive Toxicity: No data available.

Specific Target Organ Toxicity-Single Exposure: No data available.

Specific Target Organ Toxicity-Repeated Exposure: No data available.

Aspiration Hazard: No data available.

SECTION 12 - ECOLOGICAL INFORMATION

Ecotoxicity:
 Toxicity to Fish- LC₅₀- Brachydanio reiro (Freshwater Fish): > 500 mg/l (96 H)

Toxicity to Daphnia and Other Aquatic Invertebrates- EC₅₀- Water Flea (daphnia magna): 29 mg/l (24 H)

Persistence and Degradability: No data available.

Bioaccumulation Potential: No data available.

Mobility in Soil: No data available.

Results of PBT and vPvB Assessment: Not conducted.

Other Adverse Effects: No data available.

SECTION 13 - DISPOSAL CONSIDERATIONS

Recommendation: Hazardous wastes shall be managed responsibly. Contact a licensed professional waste disposal service to dispose of this material. Do not allow product to reach the sewage system. Disposal must comply will local, state, and federal regulations. Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans, or other waters unless in accordance with the requirements of an NPDES permit.

Cleansing agent: Water should be used as a cleansing agent to rinse empty containers and/or soiled PPE.

SECTION 14 - TRANSPORTATION INFORMATION

US DOT
 UN Number: 1830
 Class: 8
 Packing Group: II
 Proper Shipping Name: Sulfuric Acid
 Marine Pollutant: Yes



IMDG
 UN Number: 1830
 Class: 8
 Packing Group: II
 EMS-No.: F-A, S-B
 Proper Shipping Name: Sulfuric Acid



IATA
 UN Number: 1830
 Class: 8
 Packing Group: II
 Proper Shipping Name: Sulfuric Acid



Limited Quantity: 1 Liter
Excepted Quantity: E2 (30 ml/500 ml)

SECTION 15 - REGULATORY INFORMATION

EPA Registration No.:
Cal DPR Registration No.:

<u>Listed Hazardous Chemical</u>	<u>CAS No.</u>	<u>EPCRA EHS</u>		<u>CERCLA HS</u>	<u>CAA 112r</u>	<u>EPCRA 313</u>	<u>Prop 65 Listed</u>
		<u>RQ (lbs)</u>	<u>TPQ (lbs)</u>	<u>RQ (lbs)</u>	<u>TQ (lbs)</u>		
Sulfuric Acid	7664-93-9	1,000	1,000	1,000			Yes

Legend

EPCRA- Emergency Planning and Community Right-to-Know Act
 CERCLA- Comprehensive Environmental Response, Compensation and Liability Act
 CAA- Clean Air Act
 RQ- Release Quantity
 TPQ- Threshold Planning Quantity
 EPA- Environmental Protection Agency
 DPR- Department of Pesticide Registration

SECTION 16 - OTHER INFORMATION

NFPA



NFPA Rating Explanation Guide					
RATING NUMBER	HEALTH HAZARD	FLAMMABILITY HAZARD	INSTABILITY HAZARD	RATING SYMBOL	SPECIAL HAZARD
4	Can be lethal	Will vaporize and readily burn at normal temperatures	May explode at normal temperatures and pressures	ALK	Alkaline
3	Can cause serious or permanent injury	Can be ignited under almost all ambient temperatures	May explode at high temperature or shock	ACID	Acidic
2	Can cause temporary incapacitation or residual injury	Must be heated or high ambient temperature to burn	Violent chemical change at high temperatures or pressures	COR	Corrosive
1	Can cause significant irritation	Must be preheated before ignition can occur	Normally stable. High temperatures make unstable	OX	Oxidizing
0	No hazard	Will not burn	Stable	Radioactive	Reacts violently or explosively with water
				W	Reacts violently or explosively with water and oxidizing
				W OX	Reacts violently or explosively with water and oxidizing

HMIS III

3 HEALTH

0 FLAMMABILITY

2 REACTIVITY

D PERSONAL PROTECTION

PERSONAL PROTECTION INDEX					
A	[Goggles]		G	[Goggles] + [Gloves] + [Respirator]	
B	[Goggles] + [Gloves]		H	[Goggles] + [Gloves] + [Boots] + [Respirator]	
C	[Goggles] + [Gloves] + [Boots]		I	[Goggles] + [Gloves] + [Respirator]	
D	[Goggles] + [Gloves] + [Boots]		J	[Goggles] + [Gloves] + [Boots] + [Respirator]	
E	[Goggles] + [Gloves] + [Respirator]		K	[Respirator] + [Gloves] + [Boots]	
F	[Goggles] + [Gloves] + [Boots] + [Respirator]		X	Consult your supervisor or S.O.P. for "SPECIAL" handling directions	
A	n	o	p	q	r
Safety Glasses	Splash Goggles	Face Shield & Eye Protection	Gloves	Boots	Synthetic Apron
t	u	w	y	z	Additional Information
Dust Respirator	Vapor Respirator	Dust & Vapor Respirator	Full Face Respirator	Airline Hood or Mask	
s	Full Suit				

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