

EL DORADO CHEMICAL COMPANY

MATERIAL SAFETY DATA SHEET

SULFURIC ACID

MSDS NO.: ELDOR-3

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SECTION 1: PRODUCT AND COMPANY IDENTIFICATION.

EL DORADO CHEMICAL COMPANY
4500 North West Ave.
P. O. Box 231
El Dorado, AR 71731
Sulfuric Acid
Acid Reagent

Information Telephone: (870) 863-1498
Emergency Telephone: (870) 863-1400
Hours of Operation: 24 hours
Fax: (870) 863-1499
Chemtrec: (800) 424-9300

SECTION 2: COMPOSITION AND INFORMATION ON INGREDIENTS.

COMPOSITION:

Sulfuric Acid (Hydrogen Sulfate, Oil of Vitriol)
Formula: H_2SO_4

HAZARDOUS INGREDIENTS:

Sulfuric Acid
CAS# 7664-93-9
93% to 100%

SECTION 3: HAZARDS IDENTIFICATION.

EMERGENCY OVERVIEW:

Colorless to tan, oily liquid with no odor.

DANGER: Corrosive.

Dangerously reactive.

May be fatal if ingested.

Causes severe burns to eyes and skin.

Vapor extremely irritating to respiratory tract.

Can react violently with water.

Spills may cause fire or liberate dangerous gas.

WARNING: May cause serious delayed lung injury.

POTENTIAL HEALTH HAZARDS:

EYE:

Can cause severe burns.

SKIN:

Can cause severe burns.

INGESTION:

Causes severe burns to mouth, throat and stomach. May be fatal.

INHALATION:

Severe irritation or burns of respiratory system, pulmonary edema and lung inflammation. Serious effects on lung function may be delayed.

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SECTION 4: FIRST AID MEASURES.

EYE:

Immediately flush with water for at least 15 minutes. Contact a physician immediately.

SKIN:

Immediately flush with large amount of water while removing contaminated clothing and shoes.

INGESTION:

Give large amounts of water, unless person is unconscious or in convulsions. Do not induce vomiting. Contact a physician immediately.

INHALATION:

Remove to fresh air. Give artificial respiration or oxygen if needed. Contact a physician immediately. Observe for delayed effects.

SECTION 5: FIRE FIGHTING MEASURES.

FLAMMABLE PROPERTIES:

Nonflammable. Sulfuric acid alone is not flammable but it may cause ignition by contact with combustible materials (wood, paper, oil, clothing, etc.)

EXTINGUISHING MEDIA:

Use dry chemical or CO₂ fire extinguisher. Do not use water on sulfuric acid directly. Evolution of heat and spattering will result. Use water spray to knock down vapors. Apply water from as far away as possible. Neutralize spilled material with crushed limestone, soda ash or lime.

FIRE AND EXPLOSION HAZARDS:

Hydrogen, a highly flammable and explosive gas, and sulfur trioxide, a highly toxic gas, are generated by the action of the acid on most metals.

HAZARDOUS DECOMPOSITION PRODUCTS:

This acid will react violently with most organic materials, for example wood, with the evolution of heat and dense, acrid fumes.

FIRE FIGHTING EQUIPMENT:

Wear self-contained breathing apparatus and full acid protective clothing including rubber boots. Thoroughly decontaminate equipment after use.

SECTION 6: ACCIDENTAL RELEASE MEASURES.

Evacuate area. Avoid all skin, eye and respiratory exposure. Wear self-contained breathing apparatus and full body acid protection including rubber boots to enter spill area. Flush small leaks or spills with large quantities of water. If possible, contain large spills with diking and neutralize with limestone, soda ash or liquid caustic soda.

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SECTION 6: ACCIDENTAL RELEASE MEASURES. (cont.)

CAUTION: Neutralization can produce vigorous reactions, boiling and fumes. Remain upwind, evacuate downwind. Clean-up material is an RCRA Hazardous Waste under 40 CFR 261. Comply with all federal, state and local regulations for disposal of waste.

SECTION 7: HANDLING AND STORAGE.

HANDLING:

- Do not get in eyes, on skin, or on clothing.
- Wear full protective equipment including chemical goggles, or face shield, rubber gloves and boots.
- Do not inhale mist or vapor.
- Handle only in areas with sufficient ventilation to prevent irritation or wear a respirator.
- Do not ingest.
- Wash thoroughly after handling.
- Keep container closed when not in use.
- When diluting, slowly add acid to water with stirring and mixing to avoid spattering, boiling or eruption. Water cannot be safely added to acid.
- Emptied container retains vapor and product residue. Observe all safeguards until container is cleaned or reconditioned.

STORAGE:

- Keep container tightly closed.
- Outdoor storage in cool, dry, corrosion proof area is recommended.
- Keep containers out of sun and away from heat.
- Isolate from incompatible materials.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION.

RESPIRATORY PROTECTION:

Provide general and local exhaust ventilation to control exposure levels below airborne exposure limits. Local exhaust ventilation is the preferred primary control. Refer to the OSHA Respirator Standard 29 CFR 1910.134 for proper selection and use of personal respirators.

SKIN PROTECTION:

Wear impervious protective clothing to prevent skin contact, including an impervious apron, rubber boots or full impervious suit when splashing is possible. Provide a safety shower in the immediate vicinity of potential exposure. Refer to OSHA General Requirements for Personal Protective Equipment 29 CFR 1910.132.

EYE PROTECTION:

Wear chemical safety goggles or full-face shield to prevent eye contact. Use only in the proximity of an eye wash station. Refer to OSHA Requirements for Eye and Face Protection 29 CFR 1910.133

EXPOSURE GUIDELINES:

	OSHA-PEL (8hr-TWA)	ACGIH-TLV (8hr-TWA)	ACGIH-STEL (15min)
Sulfuric Acid	1mg/m ³	0.2 mg/m ³	3mg/m ³

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SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES.

Appearance:Colorless to tan oily liquid
Odor:Odorless
pH:<1
Flashpoint:Not Applicable
% Solids:Not Applicable
% Volatility:100%
Solubility:Completely miscible in water
Vapor Density (air=1):3.4
Vapor Pressure (mm Hg):< 0.3 @ 25 deg C (77 deg F)
Evaporation Rate (butyl acetate = 1):< 1
Weight % H₂SO₄:93.2% 98%
Specific Gravity @ 60 deg F:1.8354 to 1.8437
Freezing Point (deg F approx.):-32 +30
Boiling Point (deg F approx.):424 622

SECTION 10: STABILITY AND REACTIVITY.

STABILITY:

Stable if properly contained and handled.

INCOMPATIBILITY:

All organic materials including amines, carbonates, and alkalines; metal oxides; oxidizers and reducing agents. Addition of water to acid generates heat and must be avoided.

HAZARDOUS DECOMPOSITION PRODUCTS:

- Sulfur dioxide fumes with elevated temperatures.
- Hydrogen, a highly flammable and explosive gas is generated by the action of sulfuric acid on most metals.
- Sulfuric acid will react with most organic material with the evolution of heat and large quantities of acid, dense, white fumes.

HAZARDOUS POLYMERIZATION:

Has not been reported.

SECTION 11: TOXICOLOGICAL INFORMATION.

ACUTE:

Sulfuric acid produces severe burns and rapid corrosive destruction of body tissue. The severity of tissue damage is related to the concentration of the acid and the duration of contact. Direct contact with concentrated sulfuric acid will produce rapid destruction of body tissue. Inhalation of sulfuric acid vapor or mist will cause severe damage to the respiratory tract and lungs. Repeated inhalation of low concentrations of sulfuric acid may cause bronchitis and inflammation of the nose and throat. Contact of sulfuric acid with the eyes causes severe damage, which may lead to the loss of sight. Ingestion can cause severe injury or death. Individuals with pre-existing diseases of the lungs may have increased susceptibility to the toxicity of mixed acid exposure.

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SECTION 11: TOXICOLOGICAL INFORMATION. (cont.)

CHRONIC:

The International Agency for Research on Cancer (IARC) has classified "strong inorganic acid mists containing sulfuric acid" as a Category 1 Carcinogen (Carcinogenic to Humans). This classification is for inhalation of strong inorganic acid mists only and does not apply to liquid sulfuric acid or solutions of sulfuric acid such as this product. The basis for the IARC classification rests on several epidemiology (human) studies which did not account for exposures to other substances such as smoking and which included small numbers of subjects. Based on the overall weight of evidence, no definitive causal relationship between sulfuric acid mist and respiratory tract tumors has been shown. Sulfuric acid is not listed as a carcinogenic by OSHA, IARC or NTP.

TARGET ORGANS:

Eyes, mucous membranes, skin, respiratory system.

SECTION 12: ECOLOGICAL INFORMATION.

This product should be considered as potentially hazardous to the environment. Avoid contamination of soil, drains and water during handling. The 96-hour LC50 in bluegill fish for sulfuric acid is 10.5 ppm.

SECTION 13: DISPOSAL CONSIDERATIONS.

This material should be treated as a corrosive hazardous waste in accordance with all applicable regulations. Cleaned-up material may also be a hazardous waste due to corrosivity. This product has a RCRA waste identification of D002-Corrosive as designated in 40 CFR 261.22. The waste of this product is subject to the Land Disposal Restrictions under 40 CFR 268.

CAUTION: Neutralization can produce vigorous reaction, boiling and fumes. Use extreme caution in clean-up procedures.

SECTION 14: TRANSPORTATION INFORMATION.

Shipping Name:Sulfuric Acid
UN/DOT ID #:UN 1830
DOT/IMO Hazard Class:8
Packaging Group:II
DOT Label/Placard:Corrosive
Quantity Limits:
 Passenger Aircraft or Railcar:1 Liter
 Cargo Aircraft:30 Liter
 Vessel Stowage:C
Packaging Authorizations:
 Exceptions:49 CFR 173.154
 Non-Bulk Packaging:49 CFR 173.202
 Bulk Packaging:49 CFR 173.242
DOT Emergency Response Guide Number:137

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SECTION 15: REGULATORY INFORMATION.

CERCLA SUPERFUND, 40 CFR 117,302:

Under the Comprehensive Environmental Response, Compensation and Liability Act, a release of this product in excess of 1,000 pounds could require reporting to the National Response Center.

SARA HAZARD CATEGORY:

Under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) this product is considered to meet the following categories:

Fire Hazard:Yes

Sudden Release of Pressure:No

Reactivity Hazard:Yes

Acute Health Hazard:Yes

Chronic Health Hazard:No

SARA 313 INFORMATION:

This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendment and Reauthorization Act of 1986 (40 CFR Part 372): Sulfuric Acid.

TOXIC SUBSTANCES CONTROL ACT (TSCA):

This product is listed on the TSCA Inventory.

STATE:

CALIFORNIA PROPOSITION 65:

This product contains the following chemicals known to the State of California to cause cancer or reproductive harm: None.

PENNSYLVANIA RIGHT TO KNOW:

Hazardous Substances and Special Hazardous Substances on the List which must be identified are: Sulfuric Acids.

NEW JERSEY RIGHT TO KNOW:

Requires reporting the top five components by percent:

Sulfuric Acid:93% to 100%

Water:0% to 7.1%

CANADA:

WHMIS:

Under the requirements of the Workplace Hazardous Materials Information System, this material is a controlled substance classified as:

Class D - Division 1, Subdivision B; Toxic Material

Class E - Corrosive

All components are on the Domestic Substance List (DSL).

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SECTION 16: OTHER INFORMATION.

HAZARD RATINGS:

	<u>HMIS</u>	<u>NFPA</u>	
Health	3	3	0: minimal
Flammability	0	0	1: slight
Reactivity	2	2	2: moderate
			3: serious
			4: severe
Special Hazard:	Water Reactive		

This MSDS has been prepared in compliance with the OSHA Hazard Communication Standard 29 CFR 1910.1200.

Although the information and recommendations set forth herein (hereinafter "information") are resented in good faith and believed to be correct as of the date hereof, El Dorado Chemical Company makes no representations as to the completeness or accuracy thereof. Information is supplied upon the condition that the persons receiving same will make their own determinations as to its suitability for their purposes prior to use. In no event will El Dorado Chemical Company be responsible for damages of any nature whatsoever resulting from the use or reliance upon information. No representations or warranties, either express or implied, or merchantability, fitness for a particular purpose or any other nature are made hereunder with respect to information or the product to which information refers.

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