

**EL DORADO
CHEMICAL COMPANY
MATERIAL SAFETY DATA SHEET
MIXED NITRATING ACID, LESS THAN 50% HN03**

MSDS NO.: ELDOR-2

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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
Mixed Nitric & Sulfuric Acid
Chemical Nitrating Agent

Information Telephone:	(314) 991-2853
Emergency Telephone:	(870) 863-1400
Hours of Operation:	24 hours
Fax:	(314) 991-2376
Chemtrec:	(800) 424-9300

SECTION 2: COMPOSITION AND INFORMATION ON INGREDIENTS.

COMPOSITION:

Mixed Nitric and Sulfuric Acid (Nitric Acid <50%)

HAZARDOUS INGREDIENTS:

Nitric Acid	CAS# 7697-37-2	30% to 50%
Sulfuric Acid	CAS# 7664-93-9	50% to 70%

SECTION 3: HAZARDS IDENTIFICATION.

EMERGENCY OVERVIEW:

Colorless to light yellow liquid with acid odor.

DANGER: Strong oxidizer. Corrosive.

Dangerously reactive.

May be fatal if swallowed or inhaled.

Causes severe burns to eyes and skin.

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. Contact a physician immediately. Wash clothing before reuse.

INGESTION:

Give large amounts of water. Do not induce vomiting. Contact a physician immediately. Never give anything by mouth to an unconscious person.

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. Nitric acid alone is not flammable but it may cause ignition by contact with combustible liquids and solids.

EXTINGUISHING MEDIA:

Use dry chemical or CO₂ fire extinguisher. Do not use water on mixed 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:

Strong oxidizer. Hydrogen, a highly flammable and explosive gas, and sulfur trioxide and oxides of nitrogen, highly toxic gases, are generated by the action of the acid on most metals. Explosion may occur upon contact of mixed acid with materials such as nitrate, wood, cellulose or other organic material. May react violently with water, spattering acid.

HAZARDOUS DECOMPOSITION PRODUCTS:

Mixed 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.

CAUTION: Neutralization can produce vigorous reactions, boiling and fumes. Remain upwind, evacuate downwind. Cleaned-up material may be a RCRA Hazardous Waste. Comply with all federal, state and local regulations for disposal of waste and reporting of release.

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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
- Keep well away from heat, sparks, and flame.
- Do not ingest.
- Wash thoroughly after handling.
- Keep container closed when not in use.
- Do not allow contact with water because of violent reaction.
- 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 a 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 NIOSH/MSHA approved permissible respiratory protection. Do not use chemical cartridge respirators with oxidizable sorbents.

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.

EYE PROTECTION:

Wear chemical safety goggles or full face shield to prevent eye contact. Use only in the proximity of an eye wash station.

EXPOSURE GUIDELINES:

	OSHA-PEL 8hr-TWA	ACGIH-TLV 8hr-TWA	ACGIH-STEL (15 MIN.)
Nitric Acid	2 ppm	2 ppm	4 ppm
Sulfuric Acid	1 mg/m3	1 mg/m3	3 mg/m3

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SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES.

Appearance: Colorless to light yellow liquid
Odor: Acrid, choking odor.
Flashpoint: Not Applicable.
pH: <1
Specific Gravity: 1.5 to 1.8
% Solids: Not Applicable
% Volatiles: 100%
Solubility: Miscible in water.
Vapor Density (air=1): 1
 Nitric Acid: <1
 Sulfuric Acid: 3.4
Vapor Pressure (mm Hg):
 Nitric Acid (98%) 51mm Hg @ 25 deg C
 Sulfuric Acid (98%): <0.3mm Hg @ 252 deg C
Viscosity:
 Nitric Acid (98%) 1.0 cp @20 deg C
 Sulfuric Acid (98%) 25.0 cp @20 deg C
Freezing point:
 Nitric Acid (98%) -42 Deg F
 Sulfuric Acid (98%) +30 deg F (approx.)
Evaporation Rate (butyl acetate = 1): Approx. 1

SECTION 10: STABILITY AND REACTIVITY.

STABILITY:

Stable if properly contained and handled.

INCOMPATIBILITY:

All organic materials and reducing agents. Addition of water to acid must be avoided.

HAZARDOUS DECOMPOSITION PRODUCTS:

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

HAZARDOUS POLYMERIZATION:

Will not occur.

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SECTION 11: TOXICOLOGICAL INFORMATION.

ACUTE:

Nitric acid is highly corrosive, fuming and suffocating. Diluted nitric acid can cause inhalation irritation, eye irritation, harden skin epithelium and causes skin irritation. Concentrated nitric acid may also severely burn and stain the skin, destroys skin tissue and burn the eyes. Inhalation of nitric acid vapors can destroy lung tissue. Evidence of lung damage may not occur until 4-30 hours after initial exposure. Lung damage occurs in the form of edema which may be severe and sometimes fatal. Ingestion of nitric acid causes immediate pain and burning of the mouth, throat and stomach. Symptoms range from nausea, vomiting, circulatory collapse to death.

Sulfuric acid produces severe burns and rapid corrosive destruction of body tissue. The severity of tissue damage, like nitric acid, is related to the strength of the acid and the duration of contact. 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.

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 epidemiological (human) studies which did not account for exposure to other substances, (i.e. 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. Neither nitric acid nor sulfuric acid is classified by OSHA or NTP as carcinogenic. Annual testing indicates that sulfuric acid does not have mutagenic, embryotoxic, or reproductive effects.

TARGET ORGANS:

Eyes, mucous membranes, skin and 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.

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SECTION 14: TRANSPORTATION INFORMATION.

U.S. DEPARTMENT OF TRANSPORTATION:

(49 CFR 172.101)

Shipping Name:Nitrating Acid Mixtures

UN #:UN 1796

DOT/IMO Hazard Class:8

Packaging Group:II

DOT Label/Placard:Corrosive

Quantity Limits:

Passenger Aircraft or Railcar:Forbidden

Cargo Aircraft:30 Liter

Vessel Stowage:D

Packaging Authorizations:

Exceptions:None

Non-Bulk Packaging:49 CFR 173.158

Bulk Packaging:49 CFR 173.242

DOT Emergency Response Guide Number:157

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 may 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:No

Sudden Release of Pressure:No

Reactivity Hazard:Yes

Acute Health Hazard:Yes

Chronic Health Hazard:Yes

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): Nitric and Sulfuric Acid

TOXIC SUBSTANCES CONTROL ACT (TSCA):

The ingredients of this product are listed on the TSCA Inventory.

OSHA:

This material is considered highly hazardous by OSHA.

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SECTION 15: REGULATORY INFORMATION (cont).

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: Nitric and Sulfuric Acid.

NEW JERSEY:

Requires reporting the top five components by percent:

Nitric Acid:30% to 50%

Sulfuric Acid:50% to 70%

CANADA:

WHIMS:

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

Class C – Oxidizing Material

Class D – Division 1, Subdivision B; Toxic Material

Class E – Corrosive

SECTION 16: OTHER INFORMATION.

HAZARD RATINGS:

	HMIS	NFPA	
Health	3	3	0: minimal
Flammability	0	0	1: slight
Reactivity	1	1	2: moderate
			3: serious
			4: severe
Special Hazard:	Oxidizer	Oxidizer	

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

Although the information and recommendations set forth herein (hereinafter "information") are presented 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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