EL DORADO CHEMICAL COMPANY

MATERIAL SAFETY DATA SHEET
NITRIC ACID (70% OR GREATER)

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION.

EL DORADO CHEMICAL COMPANY
4500 North West Ave.
P. O. Box 231
El Dorado, AR 71731
Nitric Acid, 70% or Greater
Acid Reagent

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:
Nitric Acid (HN03) 70% or Greater
(Hydrogen Nitrate, Aqua Fortis, Etching Grade Nitric Acid)

HAZARDOUS INGREDIENTS:
Nitric Acid CAS# 7697-37-2 70% to 84%

SECTION 3: HAZARDS IDENTIFICATION.

EMERGENCY OVERVIEW:
Colorless to light brown liquid with acrid odor.
DANGER: Strong oxidizer. Corrosive.
Dangerously reactive.
May be fatal if ingested.
Causes severe burns to eyes and skin.
Vapor extremely irritating to respiratory tract.
Spills may cause fire or liberate dangerous gas.
WARNING: May cause serious delayed lung injury.

POTENTIAL HEALTH HAZARDS:

EYE:
Can cause severe burns. May cause irreversible eye injury.

SKIN:
Can cause severe irritation and burns. May cause deep, penetrating ulcers of the skin.

INGESTION:
Causes severe burns to mouth, throat and stomach. May cause perforation of the digestive tract. May be fatal.

SECTION 3: HAZARDS IDENTIFICATION. (cont.)

INHALATION:

Severe irritation or burns of respiratory system, pulmonary edema and lung inflammation. May cause coughing, wheezing, and shortness of breath. Serious effects on lung function may be delayed.

CHRONIC:

Repeated inhalation may cause chronic bronchitis. Repeated exposure may cause erosion of teeth.

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. Get medical aid if irritation develops or persists. Wash clothing before reuse. Leather or other materials which may retain traces of acid should be decontaminated and properly disposed.

INGESTION:

Give large amounts of water. 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. Nitric acid alone is not flammable but it may cause ignition by contact with combustible materials.

EXTINGUISHING MEDIA:

In case of fire, soak with water. Dry chemical or $C0_2$ fire extinguisher may also be used. Use water spray to cool containers and reduce and knock down vapors. Apply water from as far away as possible. Neutralize small amounts of spilled acid with crushed limestone, soda ash or lime.

FIRE AND EXPLOSION HAZARDS:

Powerful oxidizing agent. Can react explosively with reducing agents such as metal powders, hydrogen sulfide (H_2S), nitrates and organic materials such as wood or cellulose.

HAZARDOUS DECOMPOSITION PRODUCTS:

Can release highly toxic oxides of nitrogen. Reaction with organic materials result in evolution of heat and acrid fumes.

SECTION 5: FIRE FIGHTING MEASURES. (cont.)

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 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.
-Contact with water can produce a 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 OSHA Respirator Standard 29 CFR 1910.134 for proper selection and use of personal respirators.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION. (cont.)

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)
Nitric Acid	2 ppm	2 ppm	4 ppm
Nitrogen Dioxide	5 ppm	3 ppm	5 ppm

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES.

Appearance:	Colorless to light brown liquid	
Odor:	Acrid	
pH:	<1	
Flashpoint:	Not Applicable	
%Solids:	Not Applicable	
%Volatility:	100%	
Solubility:	Completely miscible in water	
Vapor Density (air=I):	1	
Vapor Pressure (mm Hg):	9-10 @ 25 deg C (77 deg F)	
Evaporation Rate (butyl acetate = 1):	Approx. 1	
Weight % HN03:	70.3%	79.0%
Specific Gravity @ 60 deg F:	1.4216	1.4573
Degrees Baume:	43	45.5
Freezing Point (deg F approx.):	-42	-42
Boiling Point (deg F approx.):	245	238
Viscosity, cp @ 20 deg C (68 F):	2.1	1.9

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:

-Oxide of nitrogen fumes with elevated temperatures.
-Nitric acid will react with most organic materials with the evolution of heat and large quantities of dense acrid fumes.

SECTION 10: STABILITY AND REACTIVITY. (cont.)

HAZARDOUS POLYMERIZATION:

Has not been reported.

SECTION 11: TOXICOLOGICAL INFORMATION.

ACUTE:

Nitric acid is highly corrosive, fuming and suffocating. Dilute nitric acid can cause inhalation irritation, eye irritation, harden skin epithelium and cause skin irritation. Concentrated nitric acid severely burns and stains the skin, destroys skin tissue and burns the eyes. Inhalation of nitric acid vapors can destroy lung tissue. Evidence of lung damage may not occur until many 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. Individuals with pre-existing diseases of the lungs may have increased susceptibility to the toxicity of acid inhalation exposure.

CHRONIC:

Continued exposure to nitric acid fumes can erode the teeth and be severely irritating and corrosive to the mucous membranes of the respiratory tract. Nitric acid is not listed as a carcinogen by IARC, NTP, ACGIH, NIOSH or OSHA.

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. Nitric acid is moderately toxic to aquatic organisms.

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: ..... Nitric Acid (*other than red fuming, with more than 70% nitric acid*)
UN/DOT ID #:..... RQ,UN 2031
DOT/IMO Hazard Class:..... 8, (5.1)
Packaging Group: I
DOT Label/Placard: ..... Corrosive
Quantity Limits:
- Passenger Aircraft or Railcar: ..... Forbidden
- Cargo Aircraft: ..... 2.5 L
- Vessel Stowage: ..... D

Packaging Authorizations:
- Exceptions: ..... NONE
- Non-bulk Packaging: ..... 49 CFR 173.158
- Bulk Packaging: ..... 49 CFR 173.243

DOT Emergency Response Guide Number:..... 44

SECTION I5: 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 1000 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: ..... 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): Nitric Acid

CLEAN AIR ACT:

This product does not contain any hazardous air pollutants.
This product does not contain any Class 1 Ozone depletors.
This product does not contain any Class 2 Ozone depletors.

CLEAN WATER ACT:

This product is listed as a Hazardous Substance under the CWA. None of the chemicals in this product are listed as Priority Pollutants or Toxic Pollutants under the CWA.

OSHA:

This material is considered highly hazardous by OSHA.

SECTION I5: REGULATORY INFORMATION (cont.)

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: Nitric Acid.

NEW JERSEY:
Requires reporting the top five components by percent:

Nitric Acid: .....70% to 84%
Water: .....16% to 30%

CANADA:

WHMIS:
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

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

SECTION 16: OTHER INFORMATION.

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

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 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.