Material Safety Data Sheet

Section 1. Product and Company Identification

Product Name Nitric Acid

Product Code NX0409P

Manufacturer EMD Chemicals Inc.
P.O. Box 70
480 Democrat Road
Gibbstown, NJ 08027
Prior to January 1, 2003 EMD Chemicals Inc. was EM Industries, Inc. or EM Science, Division of EM Industries, Inc.

Effective Date 3/4/2003

For More Information Call
856−423−6300 Technical Service
Monday−Friday: 8:00 AM − 5:00 PM

In Case of Emergency Call
800−424−9300 CHEMTREC (USA)
613−996−6666 CANUTEC (Canada)
24 Hours/Day: 7 Days/Week

Synonym None.

Material Uses Laboratory Reagent

Chemical Family Inorganic acid.

Section 2. Composition and Information on Ingredients

Component	CAS #	% by Weight
NITRIC ACID	7697−37−2	100

+ Section 3. Hazards Identification

Physical State and Appearance Liquid. (Yellowish.)

Emergency Overview
DANGER !
POISON !
STRONG OXIDIZER.
CONTACT WITH OTHER MATERIAL MAY CAUSE FIRE.
VAPOR REDUCES OXYGEN AVAILABLE FOR BREATHING.
MAY BE FATAL IF INHALED OR SWALLOWED.
CAUSES SEVERE RESPIRATORY TRACT, EYE AND SKIN BURNS.
CAUSES DAMAGE TO THE FOLLOWING ORGANS: LUNGS, MUCOUS MEMBRANES, RESPIRATORY TRACT, SKIN, EYE, LENS OR CORNEA, TEETH.

Routes of Entry Absorbed through skin. Inhalation. Ingestion.

Potential Acute Health Effects

Eyes Hazardous in case of eye contact (corrosive). Causes eye burns.

Skin Corrosive to skin on contact.

Inhalation Extremely hazardous in case of inhalation (lung corrosive). Do not breathe vapor or mist. May be fatal if inhaled. Inhalation of vapors may cause dizziness, an irregular heartbeat, narcosis, nausea or asphyxiation.

Ingestion Extremely hazardous in case of ingestion. May be fatal if swallowed.

Potential Chronic Health Effects

Carcinogenic Effects	This material is not known to cause cancer in animals or humans.
	Additional information See Toxicological Information (section 11)
Medical Conditions Aggravated by Overexposure:	Repeated or prolonged contact with spray mist may produce chronic eye irritation and severe skin irritation. Repeated or prolonged exposure to spray mist may produce respiratory tract irritation leading to frequent attacks of bronchial infection. Repeated exposure to a highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.

Section 4. First Aid Measures

Eye Contact	Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention immediately.
Skin Contact	In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Cold water may be used.Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.
Inhalation	If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.
Ingestion	If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.

Section 5. Fire Fighting Measures

Flammability of the Product	Non−flammable.
Auto−ignition Temperature	Not applicable.
Flash Points	Not applicable.
Flammable Limits	Not available.
Products of Combustion	Not applicable.
Fire Hazards in Presence of Various Substances	Not applicable.
Explosion Hazards in Presence of Various Substances	**Risks of explosion of the product in presence of static discharge:** No. **Risks of explosion of the product in presence of mechanical impact:** No.
Fire Fighting Media and Instructions	Not applicable.
Protective Clothing (Fire)	Not applicable.
Special Remarks on Fire Hazards	Not available.
Special Remarks on Explosion Hazards	Not available.

Section 6. Accidental Release Measures

Small Spill and Leak Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container.

Large Spill and Leak Stop leak if without risk. Absorb with DRY earth, sand or other non−combustible material. Do not get water inside container. Avoid contact with a combustible material (wood, paper, oil, clothing...). Keep substance damp using water spray. Do not touch spilled material. Use water spray curtain to divert vapor drift. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Call for assistance on disposal. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Spill Kit Information The following EM SCIENCE SpillSolv (TM) absorbent is recommended for this product:
SX1310 Acid Treatment Kit

Section 7. Handling and Storage

Handling Handle and open container with care. Avoid contact with combustible materials. Do not breathe vapor or mist. Do not ingest. Do not get in eyes, on skin or clothing. After handling, always wash hands thoroughly with soap and water.

Storage Keep container tightly closed. Handle and open container with care. Keep container in a cool, well−ventilated area. Separate from acids, alkalies, reducing agents and combustibles.

+ Section 8. Exposure Controls/Personal Protection

Engineering Controls Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work−station location.

Personal Protection

Eyes Face shield.

Body Full suit.

Respiratory Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate.

Hands Gloves.

Feet Boots.

Protective Clothing (Pictograms)

Personal Protection in Case of a Large Spill Splash goggles. Full suit. Vapor respirator. Boots. Gloves. A self−contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Product Name	Exposure Limits
NITRIC ACID	**ACGIH (United States, 1994).** STEL: 10 mg/m3 STEL: 4 ppm TWA: 5.2 mg/m3 TWA: 2 ppm **NIOSH REL (United States, 1994).**

STEL: 10 mg/m3
STEL: 4 ppm
TWA: 5 mg/m3 Period: 10 hour(s).
TWA: 2 ppm Period: 10 hour(s).
OSHA Final Rule (United States, 1989).
STEL: 10 mg/m3
STEL: 4 ppm
TWA: 5 mg/m3
TWA: 2 ppm
National Authority for Occupational Safety/Health (Ireland, 1999).
STEL: 10 mg/m3
STEL: 4 ppm
OEL: 5 mg/m3
OEL: 2 ppm

+ Section 9. Physical and Chemical Properties

Odor	ACRID; SUFFOCATING
Color	Colorless to light yellow.
Physical State and Appearance	Liquid. (Yellowish.)
Molecular Weight	63.02 g/mole
Molecular Formula	H−N−O3
pH	Not available.
Boiling/Condensation Point	83.94°C (183.1°F)
Melting/Freezing Point	−41.06°C (−41.9°F)
Specific Gravity	1.49 (Water = 1)
Vapor Pressure	0.3 kPa (2.6 mmHg) (@ 20°C)
Vapor Density	>1 (Air = 1)
Odor Threshold	2 ppm
Evaporation Rate	Not available.
LogKow	Not available.
Solubility	Soluble in water.

+ Section 10. Stability and Reactivity

Stability and Reactivity	The product is stable.
Conditions of Instability	Container explosion may occur under fire conditions or when heated.
Incompatibility with Various Substances	Reactive with combustible materials, organic materials, metals, acids, alkalis.
Rem/Incompatibility	Not available.
Hazardous Decomposition Products	NOx
Hazardous Polymerization	Will not occur.

+ Section 11. Toxicological Information

RTECS Number:

Nitric Acid	QU5900000, QU5775000

Toxicity	Acute toxicity of the vapor (LC50): 76 ppm 4 hour(s) [Rat].
Chronic Effects on Humans	Not available.
Acute Effects on Humans	Corrosive to eyes and skin. May be fatal if swallowed.
Synergetic Products (Toxicologically)	Not available.
Irritancy	Draize Test: Not available.
Sensitization	Not available.
Carcinogenic Effects	This material is not known to cause cancer in animals or humans.
Toxicity to Reproductive System	Tests on laboratory animals for reproductive effects are cited in Registry of Toxic Effects on Chemical Substances (RTECS).
Teratogenic Effects	Not available.
Mutagenic Effects	Not available.

+ Section 12. Ecological Information

Ecotoxicity	Not available.
BOD5 and COD	Not available.
Toxicity of the Products of Biodegradation	The products of degradation are less toxic than the product itself.

Section 13. Disposal Considerations

EPA Waste Number	D002 D001
Treatment	Specified technology− Neutralize to pH 6−9. Contact your local permitted waste disposal site (TSD) for permissible treatments sites. ALWAYS CONTACT PERMITTED WASTE DISPOSER (TSD) TO ASSURE COMPLIANCE WITH ALL CURRENT LOCAL, STATE AND FEDERAL REGULATIONS. ALWAYS CONTACT PERMITTED WASTE DISPOSER (TSD) TO ASSURE COMPLIANCE WITH ALL CURRENT LOCAL, STATE AND FEDERAL REGULATIONS.

Section 14. Transport Information

DOT Classification	Not available.
TDG Classification	Not available.
IMO/IMDG Classification	Not available.
ICAO/IATA Classification	Not available.

Section 15. Regulatory Information

U.S. Federal Regulations	TSCA 8(b) inventory: NITRIC ACID

SARA 302/304/311/312 extremely hazardous substances: NITRIC ACID
SARA 302/304 emergency planning and notification: NITRIC ACID
SARA 302/304/311/312 hazardous chemicals: NITRIC ACID
SARA 311/312 MSDS distribution − chemical inventory − hazard identification: NITRIC ACID: fire, reactive, immediate health hazard
SARA 313 toxic chemical notification and release reporting: Nitric Acid
Clean Water Act (CWA) 307: No products were found.
Clean Water Act (CWA) 311: Nitric Acid
Clean air act (CAA) 112 accidental release prevention: Nitric Acid
Clean air act (CAA) 112 regulated flammable substances: No products were found.
Clean air act (CAA) 112 regulated toxic substances: Nitric Acid

WHMIS (Canada) CLASS C: Oxidizing material.
Class D−1B: Material causing immediate and serious toxic effects (TOXIC).
CLASS E: Corrosive liquid.
CEPA DSL: Nitric Acid
This product has been classiifed in accordance with the hazard criteria of the Controlled Product Regulations and the MSDS contains all required information.

International Regulations

EINECS Nitric Acid 231−714−2

DSCL (EEC) R8− Contact with combustible material may cause fire.
R35− Causes severe burns.

International Lists Australia (NICNAS): Nitric Acid

Japan (MITI): Nitric Acid

Korea (TCCL): Nitric Acid

Philippines (RA6969): Nitric Acid
China: No products were found.

State Regulations Pennsylvania RTK: Nitric Acid: (environmental hazard, generic environmental hazard)
Massachusetts RTK: Nitric Acid
New Jersey: Nitric Acid
California prop. 65: No products were found.

Section 16. Other Information

National Fire Protection Association (U.S.A.)

Health **0**
4OXY**1**

Fire Hazard

Reactivity

Specific Hazard

Changed Since Last Revision +

Notice to Reader

The statements contained herein are based upon technical data that EMD Chemicals Inc. believes to be reliable, are offered for information purposes only and as a guide to the appropriate precautionary and emergency handling of the material by a properly trained person having the necessary technical skills. Users should consider these data only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use, storage and disposal of these materials and the safety and health of employees and customers and the protection of the environment. EMD CHEMICALS INC. MAKES NO REPRESENTATION OR WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE, WITH RESPECT TO THE INFORMATION HEREIN OR THE PRODUCT TO WHICH THE INFORMATION REFERS.