Safety Data Sheet

Better Chemistry. Better Business

EMERALD

Effects may be delayed. Causes chemical burns to the respiratory tract. Inhalation may be fatal as a result of a spasm, inflammation, edema of the larynx and bronchi, chemical pneumonitis and pulmonary edema. Aspiration may lead to pulmonary edema. May cause systemic effects. May cause acute pulmonary edema, asphyxia, chemical pneumonitis and upper airway obstruction caused by edema. Depending on the conditions, the vapors of fumes of nitric acid may actually be a mixture of nitric acid and vatous oxides of nitrogen. The composition may vary with temperature, humidity, and contact with other organic materials.

Eye:

Causes serious eye damage. Material is extremely destructive to the tissue and mucous membranes of the eye. Causes redness, pain, burning sensation and tearing. Direct contact with liquid may cause blindness or permanent eye damage.

Skin:

Causes severe skin burns. Causes irritation, pain, redness and blisters. May cause deep penetrating ulcers of the skin. Concentrated Nitric Acid turns human skin yellow on contact.

Ingestion:

May cause severe and permanent damage to the digestive tract. Causes severe burns to the gastrointestinal tract. May cause perforation of the digestive tract. May cause systemic effects. Causes severe mouth, throat, and abdominal pain upon ingestion.

5 FIRE FIGHTING MEASURES

Suitable and Unsuitable extinguishing media:	Will not burn or support combustion. Use extinguishing media appropriate for surrounding fire, such as water spray, dry chemical, foam or carbon dioxide.
Specific hazards arising from the chemical:	Closed containers of Nitric Acid may explode (due to pressure build-up) when exposed to extreme heat. During emergency conditions overexposure to decomposition products may cause a health hazard. Hazardous decomposition products include nitrogen oxides, ammonia and amines. Symptons may not be immediately apparent. Obtain medical attention.
Special protective equipment and precautions for firefighter	Fire fighters should enter area only if they are protected from all contact with the materail. Full protective clothing, including self-contained breathing apparatus, coat, pants, gloves, boots and bands around legs, arms, and waist, should be worn. No skin surfaces should be exposed.

6 ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment, & Emergency Proc	Wear appropriate chemical protection equipment such as gloves, face-shield, goggles and suitable body protection to prevent contamination of skin, eyes and personal clothing.
Methods and Materials for containment & cleaning up:	If trained in accordance 29 CFR 1910.120, leaks should be stopped. Spills should be contained and cleaned immediately. Persons performing clean up work should wear adequate personal protective equipment and clothing. Spills and releases should be reported, if required, to the appropriate local, state and federal regulatory agencies.

7 HANDLING AND STORAGE

Precautions for safe handling:	Use ventilation sufficient to keep personal exposure below the OSHA Permissible Exposure Limits (PEL) and or the ACGIH Threshold Limit Value (TLV) Time Weighted Average (TWA) exposure limits. Do not get in eyes, or on skin, or on clothing. Avoid breathing dust, fumes, gas, mist, vapors and sprays. Wear rubber protective gloves, chemical protective clothing, eye protective goggles and face shield for face protection. Keep container tightly closed. Keep only in original container .
Conditions for safe storage, inc any incompatibilities:	Store in well ventilated place. Keep container tightly closed. Store locked up and away from incompatible chemicals.

Container that have been opened must be carefully resealed and kept upright to prevent leakage.

8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Name	Std.	TWA-8hrs	STEL - 15 min.
Nitric Acid	ACGIH	2 ppm	4 ppm
Fluoboric Acid	ACGIH	2.5 mg/m3 (F)	-
Hexafluorozirconic Acid	ACGIH	2.5 mg/m3 (F)	-

ACGIH - American Control of Governmental Hygenists
OSHA - Occupational Safety and Health Administration

Ventilation:	Use local exhaust to keep personal exposures below the OSHA Permissible Exposure Limit (s) (PEL) or the ACGIH threshold Limit Values (TLV)Time Weight Average (TWA).
Respiratory Protection:	A respiratory protection program that meets OSHA 29 CFR 1910.134 and ANSI 788.2 or applicable federal requirements must be followed whenever work place conditions warrant respirator use. NIOSH's Respirator Decision Logic" may be useful in determining the suitability of various types of respirators.
Protective Gloves:	Acid resistant rubber.
Eye Protection:	Wear chemical safety goggles with face shield.
Other Protective Equipment:	Wear chemical resistant boots.
	Wear chemical resistant clothing.

9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Clear colorless liquid
Odor:	Acrid pungent
Odor Threshold:	N/A
PH:	<3
Melting Point/Freezing Point:	N/A
Initial Boiling Point and Boiling Range:	N/A
Flash Point:	N/A
Evaporation Rate:	N/A
Flammability (solid, gas):	N/A
Upper/Lower flammability or explosive limits:	N/A
Vapor Pressure:	N/A
Vapor Density:	>1 (Air=1)
Relative Density:	N/A
Solubility (ies):	Complete in water
Partition Coefficient; n-octanol/water:	N/A
Auto-ignition Temperature:	N/A
Decomposition Temperature:	N/A
Viscosity:	N/A

10 STABILITY AND REACTIVITY

Chemical Stability:	Stable under recommended storage conditions. Decomposes in the presence of air, light or organic matter. Yellow/brown color is due to the release of nitrogen dioxide upon exposure to light.

11 TOXICOLOGICAL INFORMATION

Oral Administration:	Nitric Acid -LD50->/= 90 mg/kg (rat)
Oral Administration:	Fluoboric Acid-LD50(Rat)-100 mg/kg
Inhalation:	Nitric Acid-LC50-30 min,-260 mg/m3(rat), LD50, 4 h-1302 mg/m3 (rat);LD50, 4 h-67 ppm NO2 (rat)
Delayed effects:	Severe irritation or burns to skin, eyes and respiratory system
Short term exposure:	Severe irritation or burns to skin, eyes and respiratory system
Cancer Hazard:	Not listed by IARC, NTP, OSHA, ACGIH
Routes of Exposure	Eyes, Skin, Inhalation, Ingestion

12 ECOLOGICAL INFORMATION

Abiotic degradability:	No data available
Bioaccumulation potential:	low
Soil/Sediment Result:	No data avaiilable

13 DISPOSAL CONSIDERATION

14 TRANSPORT INFORMATION

UN Number:	1760
UN Proper Shipping Name:	CORROSIVE LIQUIDS, N.O.S. (NITRIC ACID),
Transport Hazard Class (es):	8
Packing Group:	II
ERG:	154

15 REGULATORY INFORMATION