MATERIAL SAFETY DATA SHEET

NITRIC ACID

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

MANUFACTURER: Distributed by Tarr Acquisition, LLC
4115 W. Turney Avenue

Phoenix, AZ 85019

INFORMATION PHONE: (602) 233-2000

EMERGENCY PHONE: **CHEMTREC 800-424-9300 (US) Day or night**
International Call Collect CHEMTREC 202-483-7616

PRODUCT NAME: **NITRIC ACID**

PRODUCT NUMBER: 2993, 3181

UPC NUMBER:

PREPARED BY: Patricia Rodabaugh

DATE PREPARED: 12/29/2003

LAST REVISION: 12/29/2003

SYNONYMS: Aqua fortis, azotic acid, hydrogen nitrate

Portland, Oregon
Phoenix, Arizona
Auburn, Washington
Vancouver, Washington

Print Date: 12/30/2004

2. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS #	Weight %	OSHA PEL	ACGIH TLV	NOTE
Nitric acid	7697-37-2	60-70	2 ppm	2 ppm	
Water	7732-18-5	29-40	N/A	N/A	

3. HAZARDOUS IDENTIFICATION

EMERGENCY OVERVIEW: Contains nitric acid. Harmful if swallowed. Avoid prolonged breathing of vapors. Avoid contact with eyes and skin. Use only in well ventilated areas.

POTENTIAL HEALTH EFFECTS

EYE CONTACT: Direct contact with the eye will cause an immediate corrosive aciton with burns to the cornea and conjectival epithelia. Permanent eye damage and impairment of vision may result. High mist concentrations may cause mild to severe eye irritation, and in extreme cases, be corrosive to the eye.

INHALATION: ACUTE: Inhalation of nitric acid mist is severely irritation to the mucous membranes and respiratory tract, the effects of which may not show immediately after exposure. Signs exhibited after inhalation may include dryness in the throat and nose, cough, chocking, chest pain and shortness of breath. In some individuals, similar or more severe signs may be observed after a latent period of several hours following inhalation. These severe effects may be a bronchopneumonia, severe shortness of breath and/or pulmonary edema. Severe exposures can cause death and have been reported to cause tooth erosion, although these reports are complicated by exposure to multiple acids. CHRONIC: Repeated inhalation at exposure levels greater than currently accepted limits may bause chronic bronchitis and/or chemical pneumonitis.

INGESTION: ACUTE: Ingestion may cause burns to the mouth, throat and stomach, and gastroenlaritia with any or all of the following symptions: nausea, vomiting, lethargy, diarrhea, bleeding or ulceration, and may be fatal. CHRONIC: There is no data avilable on the chronic ingesiton of nitric acid. Chronic ingestion of significant amounts of nitric acid is unlikely because of its acute corrosive action.

SKIN CONTACT: ACUTE: Direct contact with the liquid is corrosive, producing immediate burns with skin destruction and possible ulceration. A yellow-brown discoloration may appear from contact with dilute and concentrated solutions. High mist concentracitons may cause irritation of the skin and possibly burns, along with yellow discoloration of the skin. CHRONIC: There is no information available on chronic exposure by this route. Chronic dermal contact with significant amounts of the acid is unlikely because of the corrosive nature of the product.

SIGNS AND SYMPTOMS OF EXPOSURE:
The IDLH concentration for nitric acid is 100 ppm. May cause irritation to skin, eyes, and digestive tract. Prolonged contact with eyes or skin may cause tissue damage.

4. FIRST AID MEASURES

EYE CONTACT: Immediately flush eyes with large amounts of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Call a physician at once.

INHALATION: If person experiences nausea, headache or dizziness, person should stop work immediately and move to fresh air until these symptoms disappear. If breathing is difficult, administer oxygen, keep the person warm and at rest. Call a physician. In the event that an individual inhales enough vapor to lose consciousness, person should be moved to fresh air at once and a physician should be called immediately. If breathing has stopped, artificial respiration should be given immediately. In all cases, ensure adequate ventilation and provide respiratory protection before the person returns to work.

INGESTION: Immediately drink large quantities of water. DO NOT induce vomiting. Call a physician at once. DO NOT give anything by mouth if the person is unconscious or if having convulsions.

SKIN CONTACT: Immediately flush with water for at least 15 minutes. Call a physician. If clothing comes in contact with the product, the clothing should be remobed immediately and should be laundered before re-use.

AGGRAVATED MEDICAL CONDITIONS:
Asthma, emphysema, and other respiratory diseases. Studies of acute and repeated exposures to nitric acid in laboratory animals have shown the lung to be the target organ of toxicity. Repeated inhalation of high concentrations of nitric acid by dogs produced chronic inflammation, pulmanary resistance and airway obstruciton. Hamsters exposed by instillation of nitric acid into the trachea showed acute bronchitis, decreased lung volume and increases in lung weight.

SUPPLEMENTAL HEALTH INFORMATION:
Interactions with other chemicasl which enhance toxicity: Oxides of nitrogen which may evolve from fuming nitric acid may enhance the respiratory effects of nitric acid. Note to Physician: Delayed pulmonary edema may occur.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES

FLASH POINT: none **FLASH POINT METHOD USED:** Tag Closed Cup

AUTOIGNITION: N/A **LEL:** **UEL:**

EXTINGUISHING MEDIA:
Use water fog, dry chemical, or CO2.

SPECIAL FIRE FIGHTING PROCEDURES:
Note the reactivity nature of this product with water. The use of SCBA is recommended for firefighters. Additional protective clothing must be worn to prevent personal contact with this material Those items include but are not limited to boots, gloves, hard hat, splash-proof goggles, full face shield and impervious clothing, i.e., chemically impervious suit. Compatible materials for reponse to this material are neoprene, butyl reuuber, and polyethylene.

UNUSUAL FIRE AND EXPLOSION HAZARDS:
Use water to cool containers exposed to fire. Use water in flooding quantities as fog. This material is non-combustible but may ignite or react with many substances.

COMBUSTION PRODUCTS:
Contact with most metals may produce flammable and potentially explosive gases, poison by inhalation, combustion upon contact with non-compatible materials such as wood or wood based products.

6. ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS SPILLED OR RELEASED:
Wear full protective equipment.. Hazardous concentrations in air may be found in local spill area and immediately downwind. Remove all sources of ignition. Stop source of spill if it may be done safely. Evacuate the immediate area and mark off accordingly but only after obtaining the proper personnel protective equiqment. Keep spills from entering drains, streams or waterways. Compatible absorbents: Sand, clay soil,

commercial absorbents, cement powders.

7. HANLDING AND STORAGE

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:

Do not get into eyes, on skin or on clothing. Avoid breathing dust, mist or spray. Do not take internally. Use with adequate ventilation and wear respiratory protection when exposure to dust, mist or spray is possible. When handling, wear splash goggles, gloves and protective clothing. Wash thoroughly after handling or contact - exposure can cause irritation or chemical burns to eyes and skin. Prevent contact with fire conditions which would emit toxic sulfur dioxide fumes. Store in a cool, dry, well ventilated area away from acids, acid fumes and oxidizers. Do not store at temperatures above 100 deg. F (38 deg. C). Do not expose to direct light.

OTHER PRECAUTIONS:

KEEP OUT OF REACH OF CHILDREN! Prolonged exposure to the atmosphere will slowly oxidize this product to produce sodium bisulfate. Always empty and clean containers of all residues before adding product to avoid potentially dangerous reaction between product and unknown residue. Returnable containers should be shiped in accordance with supplier's recommendations. Reurn shipments should comply with all Federal, State and DOT regulations. All residual sodium bisulfite should be removed from containers prior to disposal.

8. EXPOSURE CONTROL/PERSONAL PROTECTION

RESPIRATORY PROTECTION:

If exposure may or does exceed occupational exposure limits (Sec. 2) use a NIOSH/MSHA approved respirator to prevent overexposure. In accord with 29 CFR 1910.134 use either an atmosphere-suppling respir. or an air-purifying respir. for acid vapors.

VENTILATION:

Provide exhaust ventilation sufficient to keep the airborne concentration of this product below its exposure limits. Exhaust air may need to be cleaned by scrubbers or filters to reduce environmental contamination.

PROTECTIVE GLOVES:

Chemical resistant gloves should be worn. Neoprene, butyl rubber, or polyethylene.

EYE PROTECTION:

Use chemical safety goggles and/or full face shield where splashing is possible. Contact lenses should not be worn when working with this material. Maintain eye wash fountain and quick-drench facilities in work areas.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT:

Wear neoprene, butyl rubber, or polyethylene boots and apron. A full impermeable suit made of neoprene, butyl rubber or polyethylene is recommended if exposure is possible to large portion of body. Provide emergency eyewash facilities in areas where product is handled.

WORK / HYGENIC PRACTICES:

Use good personal hygiene when handling this product. Wash hands after use, before eating, drinking, smoking, or using the toilet.

ENGINEERING CONTROLS:

Facilities storing or utilizing this material should be equipped with and eyewash facility and a safety shower.

EXPOSURE GUIDELINES:

May be harmful if swallowed. May irritate body tissues. Use with adequate ventillation. Avoid breathing vapor. Do not get in eyes, on skin, on clothing. Wash thoroughly after handling.

9. PHYSICAL AND CHEMICAL PROPERTIES

SOLUBILITY IN WATER: 100% in water (% by weight)

APPEARANCE AND ODOR: Colorless to slightly yellow liquid, irritating, suffocating odor.

BOILING POINT:	181248 - 252 F	**PERCENT VOLATILE:**	
VAPOR PRESSURE:		**PH:**	<1 (1% sol'n @
EVAPORATION RATE:	N/A	**MOLECULAR WEIGHT:**	63.01 (active ingred
POUNDS PER GALLON:	996.863	**VAPOR DENSITY:**	N/A
SPECIFIC GRAVITY:	1191.37 - 1.42	**OTHER PROPERTIES:**	
MELTING POINT:	3 C		
FREEZING POINT:	-7.6 to 42		

10. STABILITY AND REACTIVITY

STABILITY: Stable

CONDITIONS TO AVOID: Heat and light. Shelf life limitations: 1 year. Incompatible materials for packaging: Polyethylene bottles, metal containers.

INCOMPATIBILITY:

Reacts with a wide variety of metals (especially when powdered), bases, carbides, sulfies, fulminates, picrates, chlorates, oxidizable inorganic compounds, organic chemicals, turpentine, and combustible materials.

HAZARDOUS DECOMPOSITION OR BY PRODUCTS:

Nitrogen oxides, hydrogen gas.

HAZARDOUS POLYMERIZATION: Will Not Occur

CONDITIONS TO AVOID: Material is not known to polymerize.

11. TOXICOLOGY INFORMATION

No known chronic effects. Not listed as a carcinogen - IARC, NTP, OSHA.

12. ECOLOGICAL INFORMATION

Avoid uncontrolled releases of this material. AQUATIC TOXICITY: The aquatic toxicity of nitric acid is related to the pH of the water which it achieves. For rainbow trout, the reported LC 50 is about a pH of 4.0 for a 7 day bioassay. Other reported aquatic toxicity data show TLV values of 180 ppm for the shore crab, 100-330 ppm for the starfish and armed bullhead, and 330-1000 ppm for the cockle. Care must be taken to prevent environmental contamination fro the use of this material. the user of this material has the responsibility to dispose of unused material, residues and containers in compliance with all relevant local, state and federal laws and regulations regarding treatment, storage and disposal for hazardous and nonhazardous wastes.

13. DISPOSAL CONSIDERATIONS

Neutralize with alkali and flush to sewer with plenty of water if permitted by applicable disposal regulations. Oxidation to sodium sulfate solution may be required prior to disposal. Neutralized or oxidized waste may have to be disposed of by an approved contractor. Any disposal practice must be in compliance with federal, state, and local regulations.

14. TRANSPORTATION INFORMATION

DOT Proper Shipping Name:	Nitric acid	**PACKING GROUP:**	II
		GUIDE NUMBER:	157
HAZARD CLASS:	8	**DOT CLASS:**	Corrosive
UN NUMBER:	UN 2031		

15. REGULATORY INFORMATION

This substance is listed on the Toxic Substances Control Act inventory.

16. OTHER INFORMATON

HMIS INFORMATION: **HEALTH:** 4 **FLAMMABILITY:** 0 **REACTIVITY:** 0 **PROTECTIVE:** H

SARA Title III Information:

SARA 302: To the best of our knowledge, none of the chemicals in this product are listed as an Extremely Hazardous Substance under Section 302 of SARA Title III nor does this product contain any other such substances.

SARA 311/312:	Acute: YES, Chronic: YES, Reactivity: YES
SARA 313:	Nitric Acid
Additional Health Info.:	Inhalation LC 50: 115 ppm (1 hr. rat), Irritation: Corrosive to eyes, skin and respiratory tract
	Oxidizer, corosive, skin and eye hazard, lung toxicity
	ACUTE TOXICITY: Oral LD 50: 50-500 mg/kg., Dermal LD 50: No data
	TOXICITY: There are no known or reported effects on fetal development or reproduction frm nitric acid exposure in humans. In the literature, there are unsubstantiated reports on developmental and reproductive effects in laboratory animals; however, these studies were not performed according to accepted protocols or practices.

N/A = Not Applicable
NDA = No Data Available

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