

MATERIAL SAFETY DATA SHEET

Nitric Acid

SECTION 1 . Product and Company Identification

Product Name and Synonym: Nitric Acid
Product Code: N3805
Material Uses:
Manufacturer: Science Stuff
1104 Newport Ave
Austin, TX 78753
(512) 837-6020
Entry Date : 6/12/2013
Print Date: 6/12/2013
24 Hour Emergency Assistance : Chemtrec 800-424-9300
Canutec 613-996-6666

Health:	3			
Flammability:	0			
Reactivity:	0			
Hazard Rating:				
Least	Slight	Moderate	High	Extreme
0	1	2	3	4
NA=Not Applicable		NE=Not Established		

SECTION 2 HAZARD IDENTIFICATION

Heat, shock, friction, or contact with other materials may cause fire or explosion. Harmful if swallowed. Avoid breathing vapor or dust. Use adequate ventilation. Avoid contact with eyes, skin or clothes. Wash thoroughly after handling. Keep closed.

Physical state: Liquid

OSHA/HCS status: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Emergency overview:

DANGER!

POISON!

OXIDIZER.

CAUSES SEVERE RESPIRATORY TRACT, EYE AND SKIN BURNS

MAY BE FATAL IF INHALED OR SWALLOWED.

CAUSES DAMAGE TO THE FOLLOWING ORGANS: LUNGS, MUCOUS MEMBRANES,

RESPIRATORY TRACT, SKIN, EYE, LENS or CORNEA, TEETH

CONTACT WITH MATERIALS MAY CAUSE FIRE.

WARNING: this product contains a chemical known to the State of California to cause cancer. birth defects or other reproductive harm.

Keep away from combustible material. Do not breath vapor or mist. Do not ingest. Do not get in eyes or on skin or clothing. Use only with adequate ventilation. Keep container tightly closed and sealed until ready for use. Wash thoroughly after handling.

Routes of entry:

Dermal contact. Inhalation. Ingestion.

Pre-existing disorders involving any target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product

Potential acute health effects:

Eyes: Severely corrosive to eyes. Causes severe burns.

Skin: Severely corrosive to the skin. Causes severe burns.

Inhalation: Very toxic by inhalation. Severely corrosive to the respiratory system. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

Ingestion: Very toxic if swallowed. May cause burns to mouth, throat and stomach,

Carcinogenicity: : No known significant effects or critical hazards.

Mutagenicity: No known significant effects or critical hazards.

Teratogenicity/ Reproductive toxicity: No known significant effects or critical hazards.

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Developmental effects: No known significant effects or critical hazards.
Fertility effects: No known significant effects or critical hazards.
Target organs: May cause damage to the following organs: lungs, mucous membranes, upper respiratory tract, skin, eyes, lens or cornea, teeth.
Medical conditions aggravated by over-exposure:

SECTION 3 MIXTURE COMPONENTS

SARA 313	Component	CAS Number	Percent Comp.	Dimension	Exposure Limits
<input checked="" type="checkbox"/>	Nitric Acid	CAS# 7697-37-2	69 - 71%	W/W	OSHA TWA 2 ppm (5mg/mf), STEL 4 ppm (10mg/mf)
<input type="checkbox"/>	Water, Deionized ASTM Type II	CAS# 7732-18-5	Balance	W/W	None Established

SECTION 4 FIRST AID MEASURES

Heat, shock, friction, or contact with other materials may cause fire or explosion. Harmful if swallowed. Avoid breathing vapor or dust. Use adequate ventilation. Avoid contact with eyes, skin or clothes. Wash thoroughly after handling. Keep closed.

FIRST AID: CALL A PHYSICIAN. SKIN: In case of contact, immediately flush skin with water for at least 15 minutes while removing contaminated clothing and shoes. Thoroughly clean clothing and shoes before reuse.

EYES: Wash eyes with plenty of water for at least 15 minutes, lifting lids occasionally. Seek Medical Aid. INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen

INGESTION: Give several glasses of milk or water. Vomiting may occur spontaneously, but DO NOT INDUCE! Never give anything by mouth to an unconscious person.

SECTION 5 FIRE FIGHTING MEASURES

Fire Extinguisher Type:	Any means suitable for extinguishing surrounding fire
Fire / Explosion Hazards:	Reaction with metals produces flammable hydrogen gas.
Fire Fighting Procedure:	Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and clothing.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Absorb spill with inert material, then place in a chemical waste container. Neutralize with a dilute solution of sodium carbonate or a weak base.

Personal precautions: No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personal from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Provide adequate ventilation. Where appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

Environmental precautions: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Spill: Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements

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or confined areas. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Use spark-Proof tools and explosion- proof equipment. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see section 1 for emergency contact information and section 13 for waste disposal. Dilute with water and mop up if water- soluble or absorb with an inert dry material and place in an appropriate waste disposal container.

Environmental precautions: Should not be released into the environment.

Methods for Containment and Clean Up: Soak up with inert absorbent material. Keep in a suitable and closed containers for disposal. Keep away from clothing and other combustible materials.

SECTION 7 HANDLING AND STORAGE

Store in a cool, dry, well-ventilated place away from incompatible materials. Wash thoroughly after handling.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Respiratory Protection: NIOSH/MSHA-approved respirator
Ventilation
Local Exhaust
Mechanical
Protective Gloves: NIOSH Approved Gloves
Eye Protection: Goggles and Face Shield
Other Protective Equipment: Wear appropriate clothing to prevent skin exposure

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ACGIH TLV (United States, 1/2009).
TWA: 2 ppm 8 hour(s)
TWA: 5.2 mg/m³ 8 hour(s)
STEL: 4 ppm 15 minute(s)
STEL: 10 mg/m³ 15 minute(s)
OSHA PEL 1989 (United States, 3/1989).
TWA: 2 ppm 8 hour(s)
TWA: 5 mg/m³ 8 hour(s)
STEL: 10 mg/m³ 15 minute(s)
STEL: 4 ppm 15 minute(s)
NIOSH REL (United States, 6/2008).
TWA: 2 ppm 10 hour(s)
TWA: 5 mg/m³ 10 hour(s)
STEL: 10 mg/m³ 15 minute(s)
STEL: 4 ppm 15 minute(s)
OSHA PEL (United States, 11/2006).
TWA: 2ppm 8 hour(s)
TWA: 5 mg/m³ 8 hour(s)

Consult local authorities for acceptable exposure limits.
Engineering measurers: Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep

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worker exposure to airborne contaminants below any recommended or statutory limits.

Hygiene measures: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking, and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal Protection

Eyes: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts.

Recommended:

face shield

Skin: Personal protective equipment for the body should be selected based on the task being performed and risks involved and should be approved by a specialist before handling this product.

Body recommended:

gloves safety apron

Respiratory: Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Recommended:

self-contained breathing apparatus (SCBA).

Hands: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Recommended:

Viton

Environmental exposure controls: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Melting Point:	-41°C	Percent Volatile by Volume:	>99
Boiling Point:	121°C	Evaporation Rate	Information not available
Vapor Pressure:	6 kPa @ 20°C	Evaporation Standard	
Vapor Density:	2.5	Auto Ignition Temp	Not applicable
Solubility in Water:	Soluble	Lower Flamm. Limit in Air	Not applicable
Appearance /Odors:	Clear, slightly fuming liquid	Upper Flamm. Limit in Air	Not applicable
Flash Point:	Information not available		
Specific Gravity:	1.408		

SECTION 10 STABILITY AND REACTIVITY INFORMATION

Stability: Stable

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Conditions to Avoid:	Material can react violently with strong reducing agents, metals, alkalis, strong bases.
Materials to Avoid:	Concentrated Bases, Water reactive materials, Oxidizable materials
Hazardous Decomposition Products:	Nitrogen compounds, acid fumes
Hazardous polymerization:	Will Not Occur
Conditions to Avoid:	None known

SECTION 11 Toxicological Information

Acute Toxicity
Component Information

Nitric acid LD50 Oral Human 430 mg/kg

Carcinogenicity: No known significant effects or critical hazards.

Mutagenic Effects: No known significant effects or critical hazards.

Teratogenicity: No known significant effects or critical hazards.

SECTION 12 Ecological Information

Aquatic ecotoxicity
Product/ingredient name
Nitric Acid

Acute LC50 180000 ug/L Marine water Crustaceans – Green or European shore crab –
Carcinus maenas – Adult 48 hours

Environmental effects : No known significant effects or critical hazards.

Other adverse effects : No known significant effects or critical hazards.

SECTION 13 Disposal Considerations

The information presented only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. Disposal should be in accordance with applicable regional, national and local laws and regulations.

SECTION 14 Transport Information

DOT Classification: Nitric acid, 8, UN2031, PG II

DOT Regulations may change from time to time. Please consult the most recent D.O.T. regulations.

SECTION 15 Regulatory Information

United States

HCS Classification:
Oxidizing material
Highly Toxic material
Corrosive material
Target organ effects

U.S. Federal Regulations

United States inventory (TSCA 8b): Nitric Acid
TSCA (Toxic Substance Control Act): This product is listed on the TSCA Inventory.
SARA 302/304/311/312 extremely hazardous substances: Nitric Acid
SARA 302/304 emergency planning and notifications: Nitric Acid
SARA 302/304/311/312 hazardous chemicals: Nitric Acid

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SARA 311/312 MSDS distribution- Chemical inventory- hazard identification: Nitric Acid
Fire Hazard: reactive, Immediate (acute) health hazard
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 substance: No products were found.
Clean Air Act (CAA) 112 regulated toxic substance: Nitric Acid

DEA List I Chemicals : not listed
(Precursor Chemicals)
DEA List II Chemicals : not listed
(essential Chemicals)

SARA 313
Form R – Reporting Requirements: Nitric Acid
CAS number : 7697-37-2 Concentration : 65-70
Supplier notification : Nitric Acid
CAS number : 7697-37-2 Concentration : 65-70

SARA 313 notifications must not be detached from the MSDS and any copying and redistribution of the MSDS shall include copying and redistribution of the notice attached to copies of the MSDS subsequently redistributed.

State regulations:
Massachusetts Substance : This material is listed.
New Jersey Hazardous Substances : This material is listed.
New York Acutely Hazardous Substances : This material is listed.
Pennsylvania RTK Hazardous Substances : This material is listed.

Canada
WHMIS (Canada) :
Class D-1A: Material causing immediate and serious toxic effects (Toxic)
Class C: Oxidizing material
Class E: Corrosive material
Canadian lists : CEPA Toxic Substance: This material is not listed.
Canadian ARET: This material is not listed.
Canadian NPRI: This material is listed.
Alberta Designated Substances: This material is not listed.
Ontario Designated Substances: This material is not listed.
Quebec Designated Substances: This material is not listed.

CEPA DSL/ CEPA NDSL : CEPA DSL:
This material is listed or exempted.
This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

SECTION 16

Additional Information

Nitric Acid

Flammability

Health

Reactivity

Revisions

NFPA

0.4

The information herein is believed to be accurate and is offered in good faith for the user's consideration and investigation. No warranty either expressed or implied is made for the completeness or accuracy of the information whether originating from the above mentioned company or not. Users of this material should satisfy themselves by independent investigation of current scientific and medical knowledge that the material can be used safely.