

# MATERIAL SAFETY DATA SHEET



Nitric Acid 20% v/v (1 + 4)

## SECTION 1 . Product and Company Identification

Product Name and Synonym: Nitric Acid 20% v/v (1 + 4)

Product Code: BDH3904

Material Uses:

Manufacturer: Aqua Solutions, Inc  
6913 Hwy 225  
Deer Park, TX 77536  
(281) 479-2569

Entry Date : 4/5/2010

Print Date: 7/21/2010

24 Hour Emergency Assistance : Chemtec 800-424-9300  
Canutec 613-996-6666

Health:	2			
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

Causes severe irritation and burns. May Be harmful if swallowed. Avoid breathing vapor or dust. Use with adequate ventilation. Avoid contact with eyes, skin, and clothes. Wash thoroughly after handling. Keep container closed.

Physical state: Liquid

Odor: Odorless

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

Emergency overview: DANGER!  
CORROSIVE!

CAUSES EYE AND SKIN BURNS.  
OXIDIZER.  
HARMFUL IF INHALED, ABSORBED THROUGH SKIN OR SWALLOWED.  
CONTAINS MATERIAL WHICH CAUSES DAMAGE TO THE FOLLOWING  
ORGANS: LUNGS, MUCOUS MEMBRANES, RESPIRATORY TRACT, SKIN, EYE, LENS  
OR CORNEA, TEETH.  
CONTACT WITH OTHER MATERIAL MAY CAUSE FIRE.

Do not ingest. Do not get in eyes or on skin or clothing. Avoid breathing vapor or mist. Store in tightly-closed container. Avoid contact with combustible materials. Use only with adequate ventilation. Wash thoroughly after handling

Routes of entry: Dermal contact. Eye contact. Inhalation. Ingestion.

Potential acute health effects

Eyes: Corrosive to eyes.

Skin: Toxic in contact with skin. Corrosive to the skin.

Inhalation: Toxic by inhalation.

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

Carcinogenic effects: No known significant effects or critical hazards.

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Mutagenic effects: No known significant effects or critical hazards.

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

Medical conditions: Repeated skin exposure can produce local skin destruction or dermatitis. Repeated or prolonged contact with spray or mist may produce chronic eye irritation and severe skin irritation. Repeated or prolonged exposure to the substance can produce target organs damage.

See toxicological information (section 11)

**SECTION 3 MIXTURE COMPONENTS**

SARA 313	Component	CAS Number	Percent Comp.	Dimension	Exposure Limits
<input checked="" type="checkbox"/>	Nitric Acid	CAS# 7697-37-2	20%	W/W	OSHA TWA 2 ppm (5mg/m <sup>3</sup> ), STEL 4 ppm (10mg/m <sup>3</sup> )
<input type="checkbox"/>	Water, Deionized ASTM Type II	CAS# 7732-18-5	Balance	W/W	None Established

**SECTION 4 FIRST AID MEASURES**

Causes severe irritation and burns. May Be harmful if swallowed. Avoid breathing vapor or dust. Use with adequate ventilation. Avoid contact with eyes, skin, and clothes. Wash thoroughly after handling. Keep container 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.

Protection of first-aiders: No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing or wear gloves.

**SECTION 5 FIRE FIGHTING MEASURES**

Fire Extinguisher Type:	Water spray, Carbon dioxide, dry chemical, powder, foam.
Fire / Explosion Hazards:	May react explosively with combustible organic or readily oxidizing materials.
Fire Fighting Procedure:	Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and clothing.

**SECTION 6 ACCIDENTAL RELEASE MEASURES**

Absorb with inert material and recover for proper disposal. Neutralize with weak base.

Personal precautions: Immediately contact emergency personnel. Eliminate all ignition sources. Keep unnecessary personnel away. Use suitable protective equipment. Do not touch or walk through spilled material.

Environmental precautions: Avoid dispersal of spilled material and runoff

and contact with soil, waterways, drains and sewers.

Methods for cleaning up: If emergency personnel are unavailable, contain spilled material. For small spills, add absorbent (soil may be used in the absence of other suitable materials), and use a non-sparking or explosion-proof means to transfer material to a sealable, appropriate container for disposal. For large spills, dike spilled material or otherwise contain material to ensure runoff does not reach a waterway. Place spilled material in an appropriate container for disposal.

**SECTION 7 HANDLING AND STORAGE**

Keep container tightly closed. Store in a cool dry place. Do not get in eyes, on skin, on clothing. Wash thoroughly after handling. Avoid contact with combustible materials. Store separate from Acids, alkalis, reducing agents and combustibles.

**SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION**

Respiratory Protection: NIOSH/MSHA-approved respirator

Ventilation

Local Exhaust

Mechanical

Protective Gloves: NIOSH Approved Gloves

Eye Protection: Splash Goggles

Other Protective Equipment: Wear appropriate clothing to prevent skin exposure

Product name - United States

Nitric Acid

ACGIH TLV (United States, 1/2006).

STEL: 10 mg/m<sup>3</sup> 15 minute/minutes.

STEL: 4 ppm 15 minute/minutes.

TWA: 5.2 mg/m<sup>3</sup> 8 hour/hours.

TWA: 2 ppm 8 hour/hours.

NIOSH REL (United States, 12/2001).

STEL: 10 mg/m<sup>3</sup> 15 minute/minutes.

STEL: 4 ppm 15 minute/minutes.

TWA: 5 mg/m<sup>3</sup> 10 hour/hours.

TWA: 2 ppm 10 hour/hours.

OSHA PEL (United States, 8/1997).

TWA: 5 mg/m<sup>3</sup> 8 hour/hours.

TWA: 2 ppm 8 hour/hours.

OSHA PEL 1989 (United States, 3/1989).

STEL: 10 mg/m<sup>3</sup> 15 hour/hours.

STEL: 4 ppm 15 hour/hours

TWA: 5 mg/m<sup>3</sup> 8 hour/hours.

TWA: 2 ppm 8 hour/hours.

Consult local authorities for acceptable exposure limits.

Engineering measures: Use only with adequate ventilation. If user

operations generate dust, fumes, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

**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 the risks involved and should be approved by a specialist before handling this product.

Body Recommended: Full suit and gloves

Feet Recommended: Boots.

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: Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Vapor respirator or 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.

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.

**SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES**

Melting Point:	Information not available	Percent Volatile by Volume:	> 90
Boiling Point:	Information not available	Evaporation Rate	Information not available
Vapor Pressure:	Information not available	Evaporation Standard	
Vapor Density:	Information not available	Auto Ignition Temp	Information not available
Solubility in Water:	Soluble	Lower Flamm. Limit in Air	Information not available
Appearance /Odors:	Clear, colorless, odorless liquid	Upper Flamm. Limit in Air	Information not available
Flash Point:	Information not available		

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Specific Gravity: Information  
not available

**SECTION 10 STABILITY AND REACTIVITY INFORMATION**

Stability: Stable  
Conditions to Avoid: Extreme heat  
Materials to Avoid: Oxidizers, bases, metal powders, carbides,  
organic materials  
Hazardous Decomposition Products: Toxic Nitrogen Oxides  
Hazardous polymerization: Will Not Occur  
Conditions to Avoid: None known

**SECTION 11 Toxicological Information**

Toxicity data

United States - Product/ingredient name: Nitric Acid

Test	Result	Route	Species
LDLo	430 mg/kg	Oral	Human

Chronic effects on humans: Contains material which causes damage to the following organs: lungs, mucous membranes, upper respiratory tract, skin, eye, lens or cornea, teeth.

Other toxic effects on humans: Very hazardous in case of skin contact (corrosive) of eye contact (corrosive), of ingestion.  
Slightly hazardous in case of inhalation (lung sensitizer, lung corrosive).

Special remarks on other toxic effects on humans: Symptoms of lung injury may be delayed. (Nitric Acid)

Specific effects

Carcinogenic effects: No known significant effects or critical hazards.

Mutagenic effects: No known significant effects or critical hazards.

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

Sensitization

Ingestion: May cause burns to mouth, throat and stomach.

Inhalation: No known significant effects or critical hazards..

Eyes: Corrosive to eyes.

Skin: Corrosive to the skin.

**SECTION 12 Ecological Information**

Environmental precaution: No known significant effects or critical hazards.

Products of degradation: These products are nitrogen oxides (NO, NO2 etc.).

Toxicity of the products of biodegradation: The product of degradation are less toxic than the product itself.

**SECTION 13 Disposal Considerations**

Waste disposal: The generation of waste should be avoided or minimized wherever possible. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains, and sewers. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any

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regional local authority requirements.

RCRA classification: Code: (C)

Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

The information presented below 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.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

**SECTION 14 Transport Information**

DOT Classification: Nitric Acid Solution, 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  
Toxic material  
Corrosive material  
Target organ effects

U.S. Federal regulations: TSCA 8(b) inventory: Listed

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 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 substances: No products were found.

Clean Air Act (CAA) 112 regulated toxic substances: Nitric Acid

SARA 313

Form R - Reporting requirements

Product name	CAS Number	Concentration
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Nitric Acid	7697-37-2	20
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Supplier Notification	CAS Number	Concentration
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Nitric Acid	7697-37-2	20
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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.

Canada

WHMIS (Canada): Class C: Oxidizing material.

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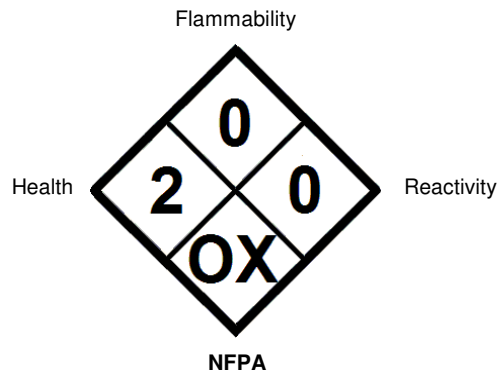
Class E: Corrosive material

CEPA DSL/CEPA NDSL: CEPA DSL: Nitric Acid; Water

This product has been classified according to the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

**SECTION 16**

**Additional Information**



**Revisions**

7/20/2010

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Review date for MSDS. STN

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.