

# Material Safety Data Sheet

OmniTrace® Nitric Acid



## 1. Product and company identification

**Product name** : OmniTrace® Nitric Acid  
**Product code** : NX0407  
**Supplier** : EMD Millipore Corp.  
290 Concord Rd.  
Billerica, MA 01821  
1-978-715-1335 Technical Service  
Monday - Friday: 8:00 - 6:00 PM EST  
**Synonym** : None.  
**Material uses** : Other non-specified industry: Analytical reagent.  
**Validation date** : 11/14/2013.  
**In case of emergency** : 800-424-9300 CHEMTREC (USA)  
613-996-6666 CANUTEC (Canada)  
24 Hours/Day: 7 Days/Week

## 2. Hazards identification

**Emergency overview** : DANGER!  
POISON!  
CAUSES SEVERE RESPIRATORY TRACT, EYE AND SKIN BURNS.  
OXIDIZER.  
CONTACT WITH OTHER MATERIAL MAY CAUSE FIRE.  
HARMFUL IF INHALED OR SWALLOWED.  
CAUSES DAMAGE TO THE FOLLOWING ORGANS: LUNGS, MUCOUS  
MEMBRANES, RESPIRATORY TRACT, SKIN, EYE, LENS OR CORNEA, TEETH.  
May be corrosive to metals.  
Keep away from combustible material. Do not breathe 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.

**Physical state** : Liquid. [Fuming liquid.]

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

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

**Potential acute health effects**

**Inhalation** : Toxic by inhalation. Severely corrosive to the respiratory system. Vapor reduces oxygen available for breathing.  
Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

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

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

**Eyes** : Severely corrosive to the eyes. Causes severe burns.

**Potential chronic health effects**

**Carcinogenicity** : No known significant effects or critical hazards.

**Mutagenicity** : No known significant effects or critical hazards.

**Teratogenicity** : No known significant effects or critical hazards.

**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: upper respiratory tract, skin, eyes, eye, lens or cornea, teeth.

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

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## 2 . Hazards identification

See toxicological information (section 11)

## 3 . Composition/information on ingredients

<u>Name</u>	<u>CAS number</u>	<u>% by weight</u>
Nitric Acid	7697-37-2	100

The 100 % indicates this product is a concentrated acid. Assay (Nitric Acid) value is approximately 65-70%.

## 4 . First aid measures

- Eye contact** : Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. 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. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.
- Inhalation** : Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.
- Ingestion** : Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.

## 5 . Fire-fighting measures

- Flammability of the product** : Contact with combustible material may cause fire. This material increases the risk of fire and may aid combustion. In a fire or if heated, a pressure increase will occur and the container may burst.
- Extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.  
**Not suitable** : None known.
- Special exposure hazards** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
- Hazardous thermal decomposition products** : Decomposition products may include the following materials:  
nitrogen oxides
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
- Special remarks on fire hazards** : Spillage May Cause Fire Or Liberated Dangerous Gas.
- Special remarks on explosion hazards** : Not classified as explosive.

## 6 . Accidental release measures

- Personal precautions** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).
- 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).

### Methods for cleaning up

## 6 . Accidental release measures

- Spill** : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements 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). Do not absorb in sawdust or other combustible material. It may lead to a fire risk when it dries out. 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.

## 7 . Handling and storage

- Handling** : Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Keep away from combustible material. Empty containers retain product residue and can be hazardous. Do not reuse container.
- Storage** : Store in accordance with local regulations. Store in original container, protected from direct sunlight. Separate from reducing agents and combustible materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage.

## 8 . Exposure controls/personal protection

Ingredient	Exposure limits
Nitric acid	<p><b>ACGIH TLV (United States, 6/2013).</b>            TWA: 2 ppm 8 hour(s).            TWA: 5.2 mg/m<sup>3</sup> 8 hour(s).            STEL: 4 ppm 15 minute(s).            STEL: 10 mg/m<sup>3</sup> 15 minute(s).</p> <p><b>OSHA PEL 1989 (United States, 3/1989).</b>            TWA: 2 ppm 8 hour(s).            TWA: 5 mg/m<sup>3</sup> 8 hour(s).            STEL: 4 ppm 15 minute(s).            STEL: 10 mg/m<sup>3</sup> 15 minute(s).</p> <p><b>NIOSH REL (United States, 4/2013).</b>            TWA: 2 ppm 10 hour(s).            TWA: 5 mg/m<sup>3</sup> 10 hour(s).            STEL: 4 ppm 15 minute(s).            STEL: 10 mg/m<sup>3</sup> 15 minute(s).</p> <p><b>OSHA PEL (United States, 2/2013).</b>            TWA: 2 ppm 8 hour(s).            TWA: 5 mg/m<sup>3</sup> 8 hour(s).</p>

**Consult local authorities for acceptable exposure limits.**

- Engineering measures** : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep 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

## 8 . Exposure controls/personal protection

- 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.
- 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
- 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 or dusts. Recommended: splash goggles, 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.  
Recommended: safety apron
- 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.

## 9 . Physical and chemical properties

- Physical state** : Liquid. [Fuming liquid.]
- Flash point** : [Product does not sustain combustion.]
- Color** : Colorless to light yellow.
- Odor** : Acrid; suffocating
- Molecular weight** : 63.01 g/mole
- Molecular formula** : HNO<sub>3</sub>
- pH** : Not available.
- Boiling/condensation point** : 121°C (249.8°F)
- Melting/freezing point** : -41.6°C (-42.9°F)
- Relative density** : 1.4
- Vapor pressure** : 6.4 kPa (48 mm Hg) [20°C]
- Vapor density** : 2.2 [Air = 1]
- Odor threshold** : Not available.
- Evaporation rate** : 0.36 (Water) compared with (n-Butyl Acetate =1)
- VOC** : 0 % (w/w)
- Solubility** : Easily soluble in the following materials: water

## 10 . Stability and reactivity

- Chemical stability** : The product is stable.
- Possibility of hazardous reactions** : Hazardous reactions or instability may occur under certain conditions of storage or use. Conditions may include the following:  
contact with combustible materials  
Reactions may include the following:  
risk of causing or intensifying fire
- Hazardous polymerization** : Under normal conditions of storage and use, hazardous polymerization will not occur.
- Conditions to avoid** : Drying on clothing or other combustible materials may cause fire.

## 10 . Stability and reactivity

- Materials to avoid** : Reactive or incompatible with the following materials: oxidizing materials, combustible materials, organic materials, metals, acids and alkalis.  
Risk of ignition or formation of flammable gases or vapors with: formaldehyde, glycerol, sulfuric acid, hydrogen iodide, chlorates, organic substances, carbon/soot, hydrocarbons, alkali metals, lithium silicide, organic solvent, phosphorus, pyridine, sulfur dioxide, hydrogen sulfide, hydrogen peroxide, acetonitrile, acetylidene, alcohols, anilines, antimony hydride, arsenic hydride, amines, ammonia, combustible substances, phosphides, aldehydes, dichloromethane, hydrazines, dioxane, acetic acid, acetone, acetic anhydride, fluorine, powdered metals.  
Violent reaction possible with: Nitriles, antimony, arsenic, boron, ferric oxide, alkalines, sodium hypochlorite.
- Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.
- Conditions of reactivity** :  
Contact with metals may lead to the formation of nitrous gases and hydrogen.

## 11 . Toxicological information

### Acute toxicity

Product/ingredient name	Test Route	Species	Result
Nitric acid	LDLo Oral	Human	430 mg/kg

### Carcinogenicity

No known significant effects or critical hazards.

### Mutagenicity

No known significant effects or critical hazards.

### Teratogenicity

No known significant effects or critical hazards.

## 12 . Ecological information

### Aquatic ecotoxicity

Product/ingredient name	Result	Species	Exposure
Nitric acid	Acute LC50 72 ppm Fresh water	Fish - Western mosquitofish - <i>Gambusia affinis</i> - Adult	96 hours
	Acute LC50 180000 ug/L Marine water	Crustaceans - Green crab - <i>Carcinus maenas</i> - Adult	48 hours

**Partition coefficient: n-octanol/water** : -0.21

**Bioconcentration factor** : Not available.



**Environmental effects** : This product shows a low bioaccumulation potential.

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

## 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.

## 14 . Transport information

Regulatory information	UN number	Proper shipping name	Classes	PG*	Label	Additional information
DOT Classification	UN2031	NITRIC ACID	8 (5.1)	II	 	<b>Reportable quantity</b> 1000 lbs. (454 kg)

PG\* : Packing group

## 15 . Regulatory information

### United States

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

**U.S. Federal regulations** : TSCA 8(b) inventory: 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 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:** No products were found.  
**Clean Air Act (CAA) 112 regulated flammable substances:** No products were found.  
**Clean Air Act (CAA) 112 regulated toxic substances:** Nitric acid

**DEA List I Chemicals ( Precursor Chemicals)** : Not listed

**DEA List II Chemicals ( Essential Chemicals)** : Not listed

### SARA 313

	<u>Product name</u>	<u>CAS number</u>	<u>Concentration</u>
<b>Form R - Reporting requirements</b>	: Nitric Acid	7697-37-2	65-70
<b>Supplier notification</b>	: Nitric Acid	7697-37-2	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.

**Massachusetts Substances** : 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 C: Oxidizing material.  
Class E: Corrosive material

## 15 . Regulatory information

- Canadian lists** : **CEPA Toxic substances:** 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** : This material is listed or exempted.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

### EU regulations

- Hazard symbol or symbols** :
- 

- Risk phrases** : R8- Contact with combustible material may cause fire.  
 R35- Causes severe burns.

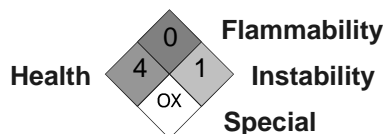
- Safety phrases** : S23- Do not breathe [\*\*\*].  
 S26- In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.  
 S36- Wear suitable protective clothing.  
 S45- In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

### International regulations

- International lists** : **Australia inventory (AICS):** This material is listed or exempted.  
**China inventory (IECSC):** This material is listed or exempted.  
**Japan inventory:** This material is listed or exempted.  
**Korea inventory:** This material is listed or exempted.  
**New Zealand Inventory of Chemicals (NZIoC):** This material is listed or exempted.  
**Philippines inventory (PICCS):** This material is listed or exempted.

## 16 . Other information

- National Fire Protection Association (U.S.A.)** :



### Notice to reader

The statements contained herein are based upon technical data that EMD Millipore Corp. 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 MILLIPORE CORP. 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.