

# Safety Data Sheet

according to OSHA HCS (29CFR 1910.1200) and WHMIS 2015 Regulations

Revision: January 27, 2021

## 1 Identification

- **Product identifier**
- **Trade name:** Nitric Acid, Concentrated, ACS Grade
- **Product code:** DU01699.RE45
- **Recommended use and restriction on use**
- **Recommended use:** Laboratory chemicals
- **Restrictions on use:** No relevant information available.
- **Details of the supplier of the Safety Data Sheet**
- **Manufacturer/Supplier:**  
AquaPhoenix Scientific, Inc.  
860 Gitts Run Road  
Hanover, PA 17331 USA  
Tel +1 (717)632-1291  
Toll-Free: (866)632-1291  
info@aquaphoenixsci.com
- **Distributor:**  
Dubois Chemicals Inc.  
3630 East Kemper Rd,  
Cincinnati, OH 45241  
(800) 438-2647
- **Emergency telephone number:**  
ChemTel Inc.  
(800)255-3924 (North America)  
+1 (813)248-0585 (International)

## 2 Hazard(s) identification

- **Classification of the substance or mixture**
- Ox. Liq. 3 H272 May intensify fire; oxidizer.
- Met. Corr.1 H290 May be corrosive to metals.
- Acute Tox. 3 H331 Toxic if inhaled.
- Skin Corr. 1A H314 Causes severe skin burns and eye damage.
- Eye Dam. 1 H318 Causes serious eye damage.

- **Label elements**

- **GHS label elements**

The product is classified and labeled according to the Globally Harmonized System (GHS).

- **Hazard pictograms:**



GHS03 GHS05 GHS06

- **Signal word:** Danger
- **Hazard statements:**  
H272 May intensify fire; oxidizer.  
H290 May be corrosive to metals.  
H331 Toxic if inhaled.  
H314 Causes severe skin burns and eye damage.

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· **Precautionary statements:**




- P210 Keep away from heat.  
 P220 Keep/Store away from clothing/combustible materials.  
 P221 Take any precaution to avoid mixing with combustibles.  
 P234 Keep only in original container.  
 P260 Do not breathe mist/vapors/spray.  
 P264 Wash thoroughly after handling.  
 P271 Use only outdoors or in a well-ventilated area.  
 P280 Wear protective gloves/protective clothing/eye protection/face protection.  
 P301+P330+P331 If swallowed: Rinse mouth. Do NOT induce vomiting.  
 P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.  
 P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
 P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
 P310 Immediately call a poison center/doctor.  
 P363 Wash contaminated clothing before reuse.  
 P370+P378 In case of fire: Use for extinction: Water.  
 P390 Absorb spillage to prevent material damage.  
 P403+P233 Store in a well-ventilated place. Keep container tightly closed.  
 P405 Store locked up.  
 P406 Store in corrosive resistant container with a resistant inner liner.  
 P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

- **Other hazards** There are no other hazards not otherwise classified that have been identified.

## 3 Composition/information on ingredients

· **Chemical characterization: Mixtures**

· **Components:**

7697-37-2	Nitric acid	65-70%
	 Ox. Liq. 2, H272  Acute Tox. 3, H331  Met. Corr. 1, H290; Skin Corr. 1A, H314; Eye Dam. 1, H318	
7732-18-5	Water	20-30%

· **Additional information:**

For the listed ingredient(s), the identity and/or exact percentage(s) are being withheld as a trade secret.  
 For the wording of the listed Hazard Statements, refer to section 16.

## 4 First-aid measures

· **Description of first aid measures**

- **General information:** Immediately remove any clothing soiled by the product.  
 · **After inhalation:**  
 Supply fresh air.  
 Seek immediate medical advice.  
 Provide oxygen treatment if affected person has difficulty breathing.  
 · **After skin contact:**

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If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

Call a doctor immediately.

Immediate medical treatment necessary. Failure to treat burns can prevent wounds from healing.

· **After eye contact:**

Protect unharmed eye.

Remove contact lenses if worn.

Rinse opened eye for several minutes under running water. Then consult a doctor.

· **After swallowing:**

Rinse out mouth and then drink plenty of water.

Do not induce vomiting; immediately call for medical help.

· **Most important symptoms and effects, both acute and delayed:**

Strong caustic effect on skin and mucous membranes.

Gastric or intestinal disorders when ingested.

Nausea in case of ingestion.

Eye damage.

Dizziness

Methaemoglobinaemia

· **Danger:**

Danger of gastric perforation.

Danger of impaired breathing.

Toxic if inhaled.

· **Indication of any immediate medical attention and special treatment needed:**

Medical supervision for at least 48 hours.

If medical advice is needed, have product container or label at hand.

## 5 Fire-fighting measures

· **Extinguishing media**

· **Suitable extinguishing agents:**

Carbon dioxide

Water fog / haze

Water spray

· **For safety reasons unsuitable extinguishing agents:** Halons.

· **Special hazards arising from the substance or mixture**

During heating or in case of fire poisonous gases are produced.

May intensify fire; oxidizer.

· **Advice for firefighters**

· **Protective equipment:**

Wear self-contained respiratory protective device.

Wear fully protective suit.

· **Additional information:**

Eliminate all ignition sources if safe to do so.

Cool endangered receptacles with water in flooding quantities.

## 6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures**

Isolate area and prevent access.

Wear protective equipment. Keep unprotected persons away.

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Ensure adequate ventilation.

For large spills, use respiratory protective device against the effects of fumes/dust/aerosol.

Keep away from ignition sources.

Protect from heat.

- **Environmental precautions**

Do not allow to enter sewers/ surface or ground water.

Inform respective authorities in case of seepage into water course or sewage system.

- **Methods and material for containment and cleaning up**

Use limestone to neutralize and/or absorb spill.

Take any precaution to avoid mixing with combustibles.

Neutralized material is an oxidizer.

Send for recovery or disposal in suitable receptacles.

- **Reference to other sections**

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

## 7 Handling and storage

- **Handling**

- **Precautions for safe handling:**

Prevent formation of aerosols.

Avoid splashes or spray in enclosed areas.

Use only in well ventilated areas.

- **Information about protection against explosions and fires:**

May intensify fire; oxidizer.

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

Protect from heat.

- **Conditions for safe storage, including any incompatibilities**

- **Requirements to be met by storerooms and receptacles:**

Store only in the original receptacle.

Store in a cool location.

Unsuitable material for receptacle: aluminium.

Unsuitable material for receptacle: steel.

- **Information about storage in one common storage facility:**

Store away from foodstuffs.

Store away from flammable substances.

Do not store together with alkalis (caustic solutions).

- **Further information about storage conditions:**

Keep containers tightly sealed.

Store in cool, dry conditions in well sealed receptacles.

- **Specific end use(s)** No relevant information available.

## 8 Exposure controls/personal protection

- **Control parameters**

- **Components with limit values that require monitoring at the workplace:**

The following constituent is the only constituent of the product which has a PEL, TLV or other

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recommended exposure limit.

## 7697-37-2 Nitric acid

PEL (USA)	Long-term value: 1 mg/m <sup>3</sup>
REL (USA)	Long-term value: 1 mg/m <sup>3</sup>
TLV (USA)	Long-term value: 0.2* mg/m <sup>3</sup> *as thoracic fraction
EL (Canada)	Long-term value: 0.2 mg/m <sup>3</sup> ACGIH A2; IARC 1
EV (Canada)	Long-term value: 0.2 mg/m <sup>3</sup>
LMPE (Mexico)	Long-term value: 0.2* mg/m <sup>3</sup> A2; *fracción torácica

### · Exposure controls

#### · General protective and hygienic measures:

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing.

Wash hands before breaks and at the end of work.

Avoid contact with the eyes and skin.

#### · Engineering controls:

Provide adequate ventilation.

#### · Breathing equipment:

NIOSH or EU approved dust respirator is highly recommended when ventilation is poor.

#### · Protection of hands:



Protective gloves

#### · Material of gloves

Fluorocarbon rubber (Viton)

Nitrile rubber, NBR

Laminated film gloves.

Neoprene gloves

Butyl rubber, BR

#### · Not suitable are gloves made of the following materials:

PVC gloves

PVA gloves

#### · Eye protection:



Safety glasses

Follow relevant national guidelines concerning the use of protective eyewear.

#### · Body protection:

Acid resistant protective clothing.

#### · Limitation and supervision of exposure into the environment

No relevant information available.

## 9 Physical and chemical properties

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## · Information on basic physical and chemical properties

### · Appearance:

**Form:** Liquid  
**Color:** Clear, colorless

· **Odor:** Acrid

· **Odor threshold:** Not determined.

· **pH-value:** Not determined.

· **Melting point/Melting range:** Not determined.

· **Boiling point/Boiling range:** Not determined.

· **Flash point:** The product is not flammable.

· **Flammability (solid, gaseous):** Not applicable.

· **Auto-ignition temperature:** Not determined.

· **Decomposition temperature:** Not determined.

· **Danger of explosion:** Product does not present an explosion hazard.

### · Explosion limits

**Lower:** Not determined.

**Upper:** Not determined.

· **Oxidizing properties:** Not determined.

· **Vapor pressure:** Not determined.

· **Density at 20 °C (68 °F):** 0.81-1.92 g/cm<sup>3</sup> (6.76-16.02 lbs/gal)

· **Relative density:** Not determined.

· **Vapor density:** Not determined.

· **Evaporation rate:** Not determined.

### · Solubility in / Miscibility with

**Water:** Fully miscible.

· **Partition coefficient (n-octanol/water):** Not determined.

### · Viscosity

**Dynamic:** Not determined.

**Kinematic:** Not determined.

· **Other information** No relevant information available.

## 10 Stability and reactivity

· **Reactivity:** No relevant information available.

· **Chemical stability:** Stable under normal temperatures and pressures.

### · Thermal decomposition / conditions to be avoided:

No decomposition if used and stored according to specifications.

### · Possibility of hazardous reactions

Acts as an oxidizing agent on organic materials such as wood, paper and fats.

May intensify fire; oxidizer.

Corrosive action on metals.

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Reacts with base metals forming hydrogen.  
Toxic fumes may be released if heated above the decomposition point.  
Reacts with halogenated compounds.

· **Conditions to avoid** No relevant information available.

· **Incompatible materials**

Metals.  
Alkalis

· **Hazardous decomposition products**

Under fire conditions only:  
Nitrogen oxides (NO<sub>x</sub>)

## 11 Toxicological information

· **Information on toxicological effects**

· **Acute toxicity:**

· **LD/LC50 values that are relevant for classification:**

**ATE (Acute Toxicity Estimate)**

Inhalative | LC50/4h | >3.79-3.9 mg/l (rat)

· **Primary irritant effect:**

· **On the skin:** Strong caustic effect on skin and mucous membranes.

· **On the eye:** Strong caustic effect.

· **Sensitization:** Based on available data, the classification criteria are not met.

· **IARC (International Agency for Research on Cancer):**

None of the ingredients are listed.

· **NTP (National Toxicology Program):**

None of the ingredients are listed.

· **OSHA-Ca (Occupational Safety & Health Administration):**

None of the ingredients are listed.

· **Probable route(s) of exposure:**

Ingestion.

Inhalation.

Eye contact.

Skin contact.

· **Acute effects (acute toxicity, irritation and corrosivity):**

Causes severe skin burns and eye damage.

Toxic if inhaled.

· **Repeated dose toxicity:** No relevant information available.

· **Germ cell mutagenicity:** Based on available data, the classification criteria are not met.

· **Carcinogenicity:** Based on available data, the classification criteria are not met.

· **Reproductive toxicity:** Based on available data, the classification criteria are not met.

· **STOT-single exposure:** Based on available data, the classification criteria are not met.

· **STOT-repeated exposure:** Based on available data, the classification criteria are not met.

· **Aspiration hazard:** Based on available data, the classification criteria are not met.

## 12 Ecological information

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- **Toxicity**
- **Aquatic toxicity** No relevant information available.
- **Persistence and degradability** No relevant information available.
- **Bioaccumulative potential:** No relevant information available.
- **Mobility in soil:** No relevant information available.
- **Additional ecological information**
- **General notes:**  
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.  
Must not reach bodies of water or drainage ditch undiluted or unneutralized.
- **Other adverse effects** No relevant information available.

## 13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:**  
Must not be disposed of together with household garbage. Do not allow product to reach sewage system. 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. Residual materials should be treated as hazardous.
- **Uncleaned packagings**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleansing agent:** Water, if necessary with cleansing agents.

## 14 Transport information

- **UN-Number**
- **DOT, ADR/RID/ADN, IMDG, IATA** UN2031

- **UN proper shipping name**
- **DOT** Nitric acid
- **ADR/RID/ADN, IMDG, IATA** NITRIC ACID

- **Transport hazard class(es)**

- **DOT**



- **Class** 8
- **Label** 8, 5.1

- **ADR/RID/ADN**



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· Class 8 (CO1)  
· Label 8+5.1

· IMDG



· Class 8  
· Label 8/5.1

· IATA



· Class 8  
· Label 8 (5.1)

· Packing group

· DOT, ADR/RID/ADN, IMDG, IATA II

· Environmental hazards Not applicable.

· Special precautions for user Warning: Corrosive substances

· Hazard identification number (Kemler code): 85

· EMS Number: F-A,S-Q

· Segregation groups Acids

· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code Not applicable.

· Transport/Additional information:

· IATA



Cargo Aircraft Only.

## 15 Regulatory information

· Safety, health and environmental regulations/legislation specific for the substance or mixture

· United States (USA)

· SARA

· Section 302 (extremely hazardous substances):

None of the ingredients are listed.

· Section 313 (Specific toxic chemical listings):

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· **TSCA (Toxic Substances Control Act)**

7697-37-2	Nitric acid
7732-18-5	Water

· **Proposition 65 (California)**

· **Chemicals known to cause cancer:**

None of the ingredients are listed.

· **Chemicals known to cause developmental toxicity for females:**

None of the ingredients are listed.

· **Chemicals known to cause developmental toxicity for males:**

None of the ingredients are listed.

· **Chemicals known to cause developmental toxicity:**

None of the ingredients are listed.

· **EPA (Environmental Protection Agency):**

None of the ingredients are listed.

· **IARC (International Agency for Research on Cancer):**

None of the ingredients are listed.

· **Canadian Domestic Substances List (DSL):**

None of the ingredients are listed.

## 16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Abbreviations and acronyms:**

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

CAS: Chemical Abstracts Service (division of the American Chemical Society)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

OSHA: Occupational Safety & Health Administration

Ox. Liq. 2: Oxidizing liquids – Category 2

Ox. Liq. 3: Oxidizing liquids – Category 3

Met. Corr. 1: Corrosive to metals – Category 1

Acute Tox. 3: Acute toxicity – Category 3

Skin Corr. 1A: Skin corrosion/irritation – Category 1A

Eye Dam. 1: Serious eye damage/eye irritation – Category 1

· **Sources**

Website, European Chemicals Agency ([echa.europa.eu](http://echa.europa.eu))

Website, US EPA Substance Registry Services ([ofmpub.epa.gov/sorinternet/registry/substreg/home/overview/home.do](http://ofmpub.epa.gov/sorinternet/registry/substreg/home/overview/home.do))

Website, Chemical Abstracts Registry, American Chemical Society ([www.cas.org](http://www.cas.org))

Patty's Industrial Hygiene, 6th ed., Rose, Vernon, ed. ISBN: 978-0-470-07488-6

Casarett and Doull's Toxicology: The Basic Science of Poisons, 8th Ed., Klaasen, Curtis D., ed., ISBN: 978-0-07-176923-5.

Safety Data Sheets, Individual Manufacturers