



# Fisher Scientific

Part of Thermo Fisher Scientific

## Material Safety Data Sheet

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Revision Number 3

### 1. PRODUCT AND COMPANY IDENTIFICATION

<b>Product Name</b>	Nitric acid (65 - 70%)
<b>Cat No.</b>	A198C-212, A200-212, A200-212LC, A200-500, A200-500LC, A200-612GAL, A200C-212, A200S-212, A200S-212LC, A200S-500, A200SI-212, A467-1, A467-2, A467-250, A467-500, A483-212
<b>Synonyms</b>	Azotic acid; Engraver's acid; Aqua fortis
<b>Recommended Use</b>	Laboratory chemicals
<b>Company</b> Fisher Scientific One Reagent Lane Fair Lawn, NJ 07410 Tel: (201) 796-7100	<b>Emergency Telephone Number</b> CHEMTREC®, Inside the USA: 800-424-9300 CHEMTREC®, Outside the USA: 001-703-527-3887

### 2. HAZARDS IDENTIFICATION

#### DANGER!

#### Emergency Overview

Oxidizer: Contact with combustible/organic material may cause fire. Causes severe burns by all exposure routes. May cause pulmonary edema.

**Appearance** Clear Colorless, Light yellow      **Physical State** Liquid      **odor** strong Acrid

**Target Organs** Eyes, Respiratory system, Skin, Teeth, Kidney, Gastrointestinal tract (GI)

#### Potential Health Effects

#### Acute Effects

#### Principle Routes of Exposure

<b>Eyes</b>	Causes severe burns. May cause blindness or permanent eye damage.
<b>Skin</b>	Causes severe burns. May be harmful in contact with skin.
<b>Inhalation</b>	Causes severe burns. May cause pulmonary edema. May be harmful if inhaled.
<b>Ingestion</b>	Ingestion causes burns of the upper digestive and respiratory tract. May be harmful if swallowed.

**Chronic Effects**

Chronic exposure to corrosive fumes/gases may cause erosion of the teeth followed by jaw necrosis. Bronchial irritation with chronic cough and frequent attacks of pneumonia are common. Gastrointestinal disturbances may also be seen. May cause adverse kidney effects. Experiments have shown reproductive toxicity effects on laboratory animals.

See Section 11 for additional Toxicological information.

**Aggravated Medical Conditions**

Preexisting eye disorders. Skin disorders.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

**Haz/Non-haz**

Component	CAS-No	Weight %
Nitric acid	7697-37-2	65 - 70
Water	7732-18-5	30 - 35

### 4. FIRST AID MEASURES

**Eye Contact**

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required.

**Skin Contact**

Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.

**Inhalation**

Move to fresh air. If breathing is difficult, give oxygen. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with a respiratory medical device. Immediate medical attention is required.

**Ingestion**

Do not induce vomiting. Call a physician or Poison Control Center immediately.

**Notes to Physician**

Treat symptomatically.

### 5. FIRE-FIGHTING MEASURES

**Flash Point  
Method**

Not applicable  
No information available.

**Autoignition Temperature  
Explosion Limits**

No information available.

**Upper  
Lower**

No data available  
No data available

**Suitable Extinguishing Media**

Substance is nonflammable; use agent most appropriate to extinguish surrounding fire..

**Unsuitable Extinguishing Media**

No information available.

**Hazardous Combustion Products**

No information available.

**Sensitivity to mechanical impact  
Sensitivity to static discharge**

No information available.  
No information available.

**Specific Hazards Arising from the Chemical**

Oxidizer: Contact with combustible/organic material may cause fire. Corrosive Material. Causes severe burns by all exposure routes. Thermal decomposition can lead to release of irritating gases and vapors.

**Protective Equipment and Precautions for Firefighters**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear

**NFPA**                      **Health 4**                      **Flammability 0**                      **Instability 0**                      **Physical hazards OX**

**6. ACCIDENTAL RELEASE MEASURES**

**Personal Precautions**                      Wear self-contained breathing apparatus and protective suit. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Ensure adequate ventilation. Do not get in eyes, on skin, or on clothing.

**Environmental Precautions**                      Should not be released into the environment.

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

**7. HANDLING AND STORAGE**

**Handling**                      Use only under a chemical fume hood. Wear personal protective equipment. Do not get in eyes, on skin, or on clothing. Keep away from clothing and other combustible materials. Do not breathe vapors/dust. Do not ingest. Contents under pressure.

**Storage**                      Keep containers tightly closed in a cool, well-ventilated place. Do not store near combustible materials

**8. EXPOSURE CONTROLS / PERSONAL PROTECTION**

**Engineering Measures**                      Use only under a chemical fume hood. Ensure that eyewash stations and safety showers are close to the workstation location.

**Exposure Guidelines**

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH
Nitric acid	TWA: 2 ppm STEL: 4 ppm	(Vacated) TWA: 2 ppm (Vacated) TWA: 5 mg/m <sup>3</sup> (Vacated) STEL: 4 ppm (Vacated) STEL: 10 mg/m <sup>3</sup> TWA: 2 ppm TWA: 5 mg/m <sup>3</sup>	IDLH: 25 ppm TWA: 2 ppm TWA: 5 mg/m <sup>3</sup> STEL: 4 ppm STEL: 10 mg/m <sup>3</sup>

Component	Quebec	Mexico OEL (TWA)	Ontario TWAEV
Nitric acid	TWA: 2 ppm TWA: 5.2 mg/m <sup>3</sup> STEL: 4 ppm STEL: 10 mg/m <sup>3</sup>	TWA: 2 ppm TWA: 5 mg/m <sup>3</sup> STEL: 4 ppm STEL: 10 mg/m <sup>3</sup>	TWA: 2 ppm STEL: 4 ppm

**NIOSH IDLH:** Immediately Dangerous to Life or Health

**Personal Protective Equipment**

**Eye/face Protection**

Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

**Skin and body protection**

Wear appropriate protective gloves and clothing to prevent skin exposure.

**Respiratory Protection**

Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Physical State</b>	Liquid
<b>Appearance</b>	Clear Colorless, Light yellow
<b>odor</b>	strong Acrid
<b>Odor Threshold</b>	No information available.
<b>pH</b>	1.0 (0.1M)
<b>Vapor Pressure</b>	0.94 kPa (20°C)
<b>Vapor Density</b>	No information available.
<b>Viscosity</b>	No information available.
<b>Boiling Point/Range</b>	120.5°C / 248.9°F
<b>Melting Point/Range</b>	-41°C / -41.8°F
<b>Decomposition temperature</b>	No information available.
<b>Flash Point</b>	Not applicable
<b>Evaporation Rate</b>	No information available.
<b>Specific Gravity</b>	1.40
<b>Solubility</b>	No information available.
<b>log Pow</b>	No data available
<b>Molecular Weight</b>	63.02
<b>Molecular Formula</b>	HNO <sub>3</sub>

## 10. STABILITY AND REACTIVITY

<b>Stability</b>	Oxidizer: Contact with combustible/organic material may cause fire.
<b>Conditions to Avoid</b>	Incompatible products. Combustible material. Excess heat.
<b>Incompatible Materials</b>	Strong bases, Reducing agents, Organic materials, Aldehydes, Alcohols, Cyanides, Metals, Powdered metals, Ammonia
<b>Hazardous Decomposition Products</b>	Nitrogen oxides (NO <sub>x</sub> )
<b>Hazardous Polymerization</b>	Hazardous polymerization does not occur.
<b>Hazardous Reactions .</b>	None under normal processing..

## 11. TOXICOLOGICAL INFORMATION

**Acute Toxicity**

**Component Information**

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Nitric acid	Not listed	Not listed	130 mg/m <sup>3</sup> ( Rat ) 4 h 7 mg/L ( Rat ) 1 h

**Irritation** Causes severe burns by all exposure routes

**Toxicologically Synergistic Products** No information available.

### Chronic Toxicity

**Carcinogenicity** There are no known carcinogenic chemicals in this product

**Sensitization** No information available.

**Mutagenic Effects** No information available.

**Reproductive Effects** Experiments have shown reproductive toxicity effects on laboratory animals.

**Developmental Effects** No information available.

**Teratogenicity** Teratogenic effects have occurred in experimental animals..

**Other Adverse Effects** See actual entry in RTECS for complete information.

**Endocrine Disruptor Information** No information available

## 12. ECOLOGICAL INFORMATION

### Ecotoxicity

Do not empty into drains.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Nitric acid	Not listed	72 mg/L LC50 96 h	Not listed	Not listed

**Persistence and Degradability** No information available

**Bioaccumulation/ Accumulation** No information available

**Mobility** .

Component	log Pow
Nitric acid	-2.3

## 13. DISPOSAL CONSIDERATIONS

**Waste Disposal Methods** Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

## 14. TRANSPORT INFORMATION

**DOT**

**UN-No** UN2031  
**Proper Shipping Name** NITRIC ACID  
**Hazard Class** 8  
**Subsidiary Hazard Class** 5.1  
**Packing Group** II

**TDG**

**UN-No** UN2031  
**Proper Shipping Name** NITRIC ACID  
**Hazard Class** 8  
**Subsidiary Hazard Class** 5.1  
**Packing Group** II

**IATA**

**UN-No** UN2031  
**Proper Shipping Name** NITRIC ACID  
**Hazard Class** 8  
**Subsidiary Hazard Class** 5.1  
**Packing Group** II

**IMDG/IMO**

**UN-No** UN2031  
**Proper Shipping Name** NITRIC ACID  
**Hazard Class** 8  
**Subsidiary Hazard Class** 5.1  
**Packing Group** II

## 15. REGULATORY INFORMATION

All of the components in the product are on the following Inventory lists:

**International Inventories**

Component	TSCA	DSL	NDSL	EINECS	ELINCS	NLP	PICCS	ENCS	AICS	CHINA	KECL
Nitric acid	X	X	-	231-714-2	-		X	X	X	X	X
Water	X	X	-	231-791-2	-		X	-	X	X	X

**Legend:**

X - Listed

E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.

F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.

N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.  
 P - Indicates a commenced PMN substance  
 R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.  
 S - Indicates a substance that is identified in a proposed or final Significant New Use Rule  
 T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.  
 XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B)).  
 Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.  
 Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

**U.S. Federal Regulations**

TSCA 12(b) Not applicable

**SARA 313**

Component	CAS-No	Weight %	SARA 313 - Threshold Values %
Nitric acid	7697-37-2	65 - 70	1.0

**SARA 311/312 Hazardous Categorization**

Acute Health Hazard Yes  
 Chronic Health Hazard No  
 Fire Hazard No  
 Sudden Release of Pressure Hazard No  
 Reactive Hazard Yes

**Clean Water Act**

Component	CWA - Hazardous Substances	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants
Nitric acid	X	1000 lb	-	-

**Clean Air Act**

Not applicable

**OSHA**

Component	Specifically Regulated Chemicals	Highly Hazardous Chemicals
Nitric acid	-	TQ: 500 lb

**CERCLA**

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Component	Hazardous Substances RQs	CERCLA EHS RQs
Nitric acid	1000 lb	1000 lb

**California Proposition 65**

This product does not contain any Proposition 65 chemicals.

**State Right-to-Know**

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Nitric acid	X	X	X	X	X

**U.S. Department of Transportation**

Reportable Quantity (RQ): Y  
 DOT Marine Pollutant N  
 DOT Severe Marine Pollutant N

**U.S. Department of Homeland Security**

This product contains the following DHS chemicals:

Component	DHS Chemical Facility Anti-Terrorism Standard
Nitric acid	2000 lb STQ

**Other International Regulations**

Mexico - Grade No information available

Canada

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

**WHMIS Hazard Class**

- C Oxidizing materials
- E Corrosive material



**16. OTHER INFORMATION**

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**Disclaimer**

The information provided on this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

**End of MSDS**