

FSUN2272

## Nitric acid S.G. 1.42 (>68%)

### SECTION 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

**产品说明:**  
**Product Description:** 硝酸65-70%  
 Nitric acid S.G. 1.42 (>68%)

**Cat No. :** N/2272/PB08, N/2272/PB15, N/2272/PB17  
**Synonyms** Azotic acid; Engraver's acid; Aqua fortis  
**CAS No** 7697-37-2  
**Molecular Formula** HNO<sub>3</sub>

**Supplier**
**UK entity/business name**  
 Fisher Scientific UK  
 Bishop Meadow Road, Loughborough,  
 Leicestershire LE11 5RG, United Kingdom

**EU entity/business name**  
 Thermo Fisher Scientific  
 Janssen Pharmaceuticaaan 3a  
 2440 Geel, Belgium

**Emergency Telephone Number** Tel: 01509 231166  
 Chemtrec US: (800) 424-9300  
 Chemtrec EU: 001-703-527-3887

**E-mail address** begel.sdsdesk@thermofisher.com

**Recommended Use** Laboratory chemicals.  
**Uses advised against** No Information available

### SECTION 2. HAZARD IDENTIFICATION

**Physical State**  
Liquid

**Appearance**  
Clear Colorless, Light yellow

**Odor**  
Strong Acrid

#### Emergency Overview

May intensify fire; oxidizer. Causes severe skin burns and eye damage. May be corrosive to metals. Corrosive to the respiratory tract. Toxic if inhaled.

#### Classification of the substance or mixture

Oxidizing liquids	Category 3
Substances/mixtures corrosive to metal	Category 1
Acute Inhalation Toxicity - Vapors	Category 3
Skin Corrosion/Irritation	Category 1 A
Serious Eye Damage/Eye Irritation	Category 1

#### Label Elements

**Signal Word****Danger****Hazard Statements**

H272 - May intensify fire; oxidizer  
H290 - May be corrosive to metals  
H314 - Causes severe skin burns and eye damage  
H331 - Toxic if inhaled

**Precautionary Statements****Prevention**

P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking  
P220 - Keep away from clothing and other combustible materials  
P221 - Take any precaution to avoid mixing with combustibles  
P234 - Keep only in original packaging  
P264 - Wash face, hands and any exposed skin thoroughly after handling  
P271 - Use only outdoors or in a well-ventilated area  
P280 - Wear protective gloves/protective clothing/eye protection/face protection  
P284 - Wear respiratory protection

**Response**

P390 - Absorb spillage to prevent material damage  
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 or 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 or doctor  
P370 + P378 - In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish  
P362 + P364 - Take off contaminated clothing and wash it before reuse

**Storage**

P402 - Store in a dry place  
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed  
P406 - Store in corrosion resistant polypropylene container with a resistant liner  
P405 - Store locked up

**Disposal**

P501 - Dispose of contents/ container to an approved waste disposal plant

**Physical and Chemical Hazards**

Oxidizing. Contact with combustible material may cause fire. May be corrosive to metals.

**Health Hazards**

Corrosive. Causes skin and eye burns. Causes serious eye damage. Toxic if inhaled.

**Environmental hazards**

Contains no substances known to be hazardous to the environment or not degradable in waste water treatment plants. Will likely be mobile in the environment due to its water solubility. The product is water soluble, and may spread in water systems.

This product does not contain any known or suspected endocrine disruptors.

**SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

Component	CAS No	Weight %
Nitric acid ...% [C ≤ 70 %]	7697-37-2	65 - 70
Water	7732-18-5	30 - 35

**SECTION 4. FIRST AID MEASURES****General Advice**

Immediate medical attention is required. Show this safety data sheet to the doctor in attendance.

**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. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Call a physician immediately.

**Inhalation**

If breathing is difficult, give oxygen. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Remove from exposure, lie down. Call a physician immediately.

**Ingestion**

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Clean mouth with water. Call a physician immediately.

**Most important symptoms and effects**

Causes burns by all exposure routes. Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation: Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated

**Self-Protection of the First Aider**

Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.

**Notes to Physician**

Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Do not give chemical antidotes. Asphyxia from glottal edema may occur. Marked decrease in blood pressure may occur with moist rales, frothy sputum, and high pulse pressure. Treat symptomatically.

**SECTION 5. FIRE-FIGHTING MEASURES****Suitable Extinguishing Media**

CO<sub>2</sub>, dry chemical, dry sand, alcohol-resistant foam.

**Extinguishing media which must not be used for safety reasons**

No information available.

**Specific Hazards Arising from the Chemical**

Thermal decomposition can lead to release of irritating gases and vapors. The product causes burns of eyes, skin and mucous membranes. Oxidizer: Contact with combustible/organic material may cause fire. May ignite combustibles (wood, paper, oil, clothing, etc.).

**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. Thermal decomposition can lead to release of irritating gases and vapors.

**SECTION 6. ACCIDENTAL RELEASE MEASURES****Personal Precautions**

Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Ensure adequate ventilation. Use personal protective equipment as required.

**Environmental Precautions**

Should not be released into the environment. Do not flush into surface water or sanitary sewer system. See Section 12 for additional Ecological Information.

**Methods for Containment and Clean Up**

Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. Sweep up and shovel into suitable containers for disposal. Wear self-contained breathing apparatus and protective suit.

Refer to protective measures listed in Sections 8 and 13.

**SECTION 7. HANDLING AND STORAGE****Handling**

Use only under a chemical fume hood. Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on clothing. Do not ingest. If swallowed then seek immediate medical assistance. Do not breathe mist/vapors/spray. Keep away from clothing and other combustible materials.

**Storage**

Keep containers tightly closed in a dry, cool and well-ventilated place. Do not store near combustible materials. Do not store in metal containers. Keep in properly labeled containers. Corrosives area.

**Specific Use(s)**

Use in laboratories

**SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION****Control Parameters**

Component	China	Taiwan	Thailand	Hong Kong
Nitric acid ...% [C ≤ 70 %]	-	TWA: 2 ppm TWA: 5.2 mg/m <sup>3</sup>	TWA: 2 ppm	TWA: 2 ppm TWA: 5.2 mg/m <sup>3</sup> STEL: 4 ppm STEL: 10 mg/m <sup>3</sup>

Component	ACGIH TLV	OSHA PEL	NIOSH	The United Kingdom	European Union
Nitric acid ...% [C ≤ 70 %]	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 REL = 2 ppm (TWA) REL = 5 mg/m <sup>3</sup> (TWA) STEL: 4 ppm STEL: 10 mg/m <sup>3</sup>	STEL: 1 ppm 15 min STEL: 2.6 mg/m <sup>3</sup> 15 min	STEL: 1 ppm (15min) STEL: 2.6 mg/m <sup>3</sup> (15min)

Legend

ACGIH - American Conference of Governmental Industrial Hygienists

OSHA - Occupational Safety and Health Administration

NIOSH: NIOSH - National Institute for Occupational Safety and Health

**Exposure Controls****Engineering Measures**

Use only under a chemical fume hood. Ensure that eyewash stations and safety showers are close to the workstation location. Ensure adequate ventilation, especially in confined areas. Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source.

**Personal protective equipment****Eye Protection**

Goggles (European standard - EN 166)

**Hand Protection**

Protective gloves

Glove material	Breakthrough time	Glove thickness	EU standard	Glove comments
Neoprene gloves	> 480 minutes	0.45 mm	Level 6	As tested under EN374-3 Determination of Resistance to Permeation by Chemicals
Butyl rubber	> 480 minutes	0.35 mm	EN 374	
Nitrile rubber	< 10 minutes	0.38 mm		

Inspect gloves before use.

Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves.

(Refer to manufacturer/supplier for information)

Ensure gloves are suitable for the task: Chemical compatibility, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.

Remove gloves with care avoiding skin contamination.

**Skin and body protection**

Long sleeved clothing

**Respiratory Protection**

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly

**Large scale/emergency use**

Use a NIOSH/MSHA or European Standard EN 136 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced

**Recommended Filter type:** Particulates filter conforming to EN 143 or Acid gases filter Type E Yellow conforming to EN14387**Small scale/Laboratory use**

Use a NIOSH/MSHA or European Standard EN 149:2001 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

**Recommended half mask:-** Valve filtering: EN405; or; Half mask: EN140; plus filter, EN 141

When RPE is used a face piece Fit Test should be conducted

**Hygiene Measures**

Keep away from food, drink and animal feeding stuffs. When using do not eat, drink or smoke. Contaminated work clothing should not be allowed out of the workplace. Provide regular cleaning of equipment, work area and clothing. Avoid contact with skin, eyes or clothing. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wear suitable gloves and eye/face protection.

**Environmental exposure controls**

Prevent product from entering drains.

**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES****Appearance**

Clear Colorless, Light yellow

**Physical State**

Liquid

**Odor**

Strong Acrid

**Odor Threshold**

No data available

**pH**

&lt; 1.0

(0.1M)

**Melting Point/Range**

-41 °C / -41.8 °F

**Softening Point**

No data available

**Boiling Point/Range**

Not applicable

**Flash Point**

Not applicable

**Method -** No information available**Evaporation Rate**

No data available

**Flammability (solid,gas)**

Not applicable

Liquid

**Explosion Limits**

No data available

**Vapor Pressure**

0.94 kPa (20°C)

**Vapor Density**

No data available

(Air = 1.0)

**Specific Gravity / Density**

1.40

**Bulk Density**

Not applicable

Liquid

**SAFETY DATA SHEET**

Nitric acid S.G. 1.42 (&gt;68%)

<b>Water Solubility</b>	Miscible
<b>Solubility in other solvents</b>	No information available
<b>Partition Coefficient (n-octanol/water)</b>	
<b>Component</b>	<b>log Pow</b>
Nitric acid ...% [C ≤ 70 %]	-2.3
<b>Autoignition Temperature</b>	No data available
<b>Decomposition Temperature</b>	No data available
<b>Viscosity</b>	No data available
<b>Explosive Properties</b>	No information available
<b>Oxidizing Properties</b>	Oxidizer
<b>Molecular Formula</b>	HNO <sub>3</sub>
<b>Molecular Weight</b>	63.01

**SECTION 10. STABILITY AND REACTIVITY**

<b>Stability</b>	Oxidizer: Contact with combustible/organic material may cause fire.
<b>Hazardous Reactions</b>	None under normal processing.
<b>Hazardous Polymerization</b>	Hazardous polymerization does not occur.
<b>Conditions to Avoid</b>	Incompatible products. Combustible material. Excess heat. Exposure to air or moisture over prolonged periods.
<b>Materials to avoid</b>	Combustible material. Strong bases. Reducing Agent. Metals. Finely powdered metals. Organic materials. Aldehydes. Alcohols. Cyanides. Ammonia. Strong reducing agents.
<b>Hazardous Decomposition Products</b>	Nitrogen oxides (NO <sub>x</sub> ). Thermal decomposition can lead to release of irritating gases and vapors.

**SECTION 11. TOXICOLOGICAL INFORMATION****Product Information****(a) acute toxicity;**  
**Toxicology data for the components**

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Nitric acid ...% [C ≤ 70 %]			LC50 = 2500 ppm. (Rat) 1h
Water	-	-	-

<b>(b) skin corrosion/irritation;</b>	Category 1 A
<b>(c) serious eye damage/irritation;</b>	Category 1
<b>(d) respiratory or skin sensitization;</b>	
<b>Respiratory</b>	Based on available data, the classification criteria are not met
<b>Skin</b>	Based on available data, the classification criteria are not met
<b>(e) germ cell mutagenicity;</b>	Based on available data, the classification criteria are not met
<b>(f) carcinogenicity;</b>	Based on available data, the classification criteria are not met
	There are no known carcinogenic chemicals in this product

## Nitric acid S.G. 1.42 (&gt;68%)

(g) reproductive toxicity;	Based on available data, the classification criteria are not met
(h) STOT-single exposure;	Based on available data, the classification criteria are not met
(i) STOT-repeated exposure;	Based on available data, the classification criteria are not met
Target Organs	None known.
(j) aspiration hazard;	Based on available data, the classification criteria are not met
Symptoms / effects, both acute and delayed	Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation: Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated

## SECTION 12. ECOLOGICAL INFORMATION

**Ecotoxicity effects** Do not empty into drains. Large amounts will affect pH and harm aquatic organisms.

**Persistence and Degradability** Readily biodegradable  
**Persistence** Miscible with water, Persistence is unlikely, based on information available.

**Bioaccumulative Potential** Bioaccumulation is unlikely

Component	log Pow	Bioconcentration factor (BCF)
Nitric acid ...% [C ≤ 70 %]	-2.3	No data available

**Mobility in soil** The product is water soluble, and may spread in water systems Will likely be mobile in the environment due to its water solubility Highly mobile in soils

**Endocrine Disruptor Information** This product does not contain any known or suspected endocrine disruptors  
**Persistent Organic Pollutant** This product does not contain any known or suspected substance  
**Ozone Depletion Potential** This product does not contain any known or suspected substance

## SECTION 13. DISPOSAL CONSIDERATIONS

**Waste from Residues/Unused Products** Waste is classified as hazardous. Dispose of in accordance with the European Directives on waste and hazardous waste. Dispose of in accordance with local regulations.

**Contaminated Packaging** Dispose of this container to hazardous or special waste collection point.

**Other Information** Do not flush to sewer. Waste codes should be assigned by the user based on the application for which the product was used. Do not empty into drains. Large amounts will affect pH and harm aquatic organisms. Solutions with low pH-value must be neutralized before discharge.

## SECTION 14. TRANSPORT INFORMATION

Road and Rail Transport

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

**SAFETY DATA SHEET**

Nitric acid S.G. 1.42 (&gt;68%)

**Packing Group** II**IMDG/IMO**

**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

**Special Precautions for User** No special precautions required**SECTION 15. REGULATORY INFORMATION****International Inventories**

X = listed, China (IECSC), Europe (EINECS/ELINCS/NLP), U.S.A. (TSCA), Canada (DSL/NDSL), Philippines (PICCS), Japan (ENCS), Japan (ISHL), Australia (AICS), Korea (KECL).

Component	The Inventory of Hazardous Chemicals (2015 Edition)	List of dangerous goods GB 12268 - 2012	TCSI	IECSC	EINECS	TSCA	DSL	PICCS	ENCS	ISHL	AICS	KECL
Nitric acid ...% [C ≤ 70 %]	X	X	X	X	231-714-2	X	X	X	X	X	X	KE-25911
Water	-	-	X	X	231-791-2	X	X	X	X		X	KE-35400

**National Regulations****SECTION 16. OTHER INFORMATION**

**Creation Date** 12-Mar-2009  
**Revision Date** 13-Aug-2025  
**Revision Summary** Not applicable.

**Training Advice**

Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene.

Use of personal protective equipment, covering appropriate selection, compatibility, breakthrough thresholds, care, maintenance, fit and standards.

First aid for chemical exposure, including the use of eye wash and safety showers.

Chemical incident response training.

**Legend**



## Nitric acid S.G. 1.42 (&gt;68%)

**CAS** - Chemical Abstracts Service**EINECS/ELINCS** - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances**PICCS** - Philippines Inventory of Chemicals and Chemical Substances**IECSC** - Chinese Inventory of Existing Chemical Substances**KECL** - Korean Existing and Evaluated Chemical Substances**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory**DSL/NDL** - Canadian Domestic Substances List/Non-Domestic Substances List**ENCS** - Japanese Existing and New Chemical Substances**AICS** - Australian Inventory of Chemical Substances**NZIoC** - New Zealand Inventory of Chemicals**WEL** - Workplace Exposure Limit**ACGIH** - American Conference of Governmental Industrial Hygienists**DNEL** - Derived No Effect Level**RPE** - Respiratory Protective Equipment**LC50** - Lethal Concentration 50%**NOEC** - No Observed Effect Concentration**PBT** - Persistent, Bioaccumulative, Toxic**TWA** - Time Weighted Average**IARC** - International Agency for Research on Cancer**PNEC** - Predicted No Effect Concentration**LD50** - Lethal Dose 50%**EC50** - Effective Concentration 50%**POW** - Partition coefficient Octanol:Water**vPvB** - very Persistent, very Bioaccumulative**ICAO/IATA** - International Civil Aviation Organization/International Air Transport Association**ADR** - European Agreement Concerning the International Carriage of Dangerous Goods by Road**OECD** - Organisation for Economic Co-operation and Development**BCF** - Bioconcentration factor**IMO/IMDG** - International Maritime Organization/International Maritime Dangerous Goods Code**MARPOL** - International Convention for the Prevention of Pollution from Ships**ATE** - Acute Toxicity Estimate**VOC** - (Volatile Organic Compound)**Key literature references and sources for data**<https://echa.europa.eu/information-on-chemicals>

Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

**Physical hazards**

On basis of test data

**Health Hazards**

Calculation method

**Environmental hazards**

Calculation method

**Disclaimer**

The information provided in 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 guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered 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 materials or in any process, unless specified in the text

**End of Safety Data Sheet**