

Creation Date 07-Jun-2011

Revision Date 01-Jan-2021

Revision Number 11

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Product Description: **Nitric acid S.G. 1.42 (70%)**
 Cat No. : **N/2250/15, N/2250/17, N/2250/25, N/2250/PB15, N/2250/PB17**
 CAS-No **7697-37-2**
 EC-No. **231-714-2**
 Reach Registration Number **01-2119487297-23**

1.2. Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Laboratory chemicals.
 Sector of use SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites
 Product category PC21 - Laboratory chemicals
 Process categories PROC15 - Use as a laboratory reagent
 Environmental release category ERC6a - Industrial use resulting in manufacture of another substance (use of intermediates)
 Uses advised against No Information available

1.3. Details of the supplier of the safety data sheet

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

EU entity/business name
 Acros Organics BVBA
 Janssen Pharmaceuticaaan 3a
 2440 Geel, Belgium

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

1.4. Emergency telephone number

Tel: 01509 231166
 Chemtrec US: (800) 424-9300
 Chemtrec EU: 001 (202) 483-7616

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

CLP Classification - Regulation (EC) No 1272/2008

Physical hazards

Oxidizing liquids

Category 3 (H272)

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Substances/mixtures corrosive to metal	Category 1 (H290)
Health hazards	
Acute Inhalation Toxicity - Vapors	Category 3 (H331)
Skin Corrosion/Irritation	Category 1 (H314) A
Serious Eye Damage/Eye Irritation	Category 1 (H318)
Environmental hazards	
Based on available data, the classification criteria are not met	

Full text of Hazard Statements: see section 16

2.2. Label elements



Signal Word

Danger

Hazard Statements

- H290 - May be corrosive to metals
- H272 - May intensify fire; oxidizer
- H331 - Toxic if inhaled
- H314 - Causes severe skin burns and eye damage
- EUH071 - Corrosive to the respiratory tract

Precautionary Statements

- P280 - Wear protective gloves/protective clothing/eye protection/face protection
- P221 - Take any precaution to avoid mixing with combustibles
- P301 + P330 + P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting
- 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/physician
- P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower

2.3. Other hazards

Substance is not considered persistent, bioaccumulative and toxic (PBT) / very persistent and very bioaccumulative (vPvB)

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

Component	CAS-No	EC-No.	Weight %	CLP Classification - Regulation (EC) No 1272/2008
Nitric acid	7697-37-2	231-714-2	65-70	Ox. Liq. 2 (H272) Met. Corr. 1 (H290) Acute Tox. 3 (H331)

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				Skin Corr. 1A (H314) Eye Dam. 1 (H318) (EUH071)
Water	7732-18-5	231-791-2	30-35	-

Component	Specific concentration limits (SCL's)	M-Factor	Component notes
Nitric acid	Ox. Liq. 2 :: C>=99% Ox. Liq. 3 :: 65%<=C<99% Skin Corr. 1A :: C>=20% Skin Corr. 1B :: 5%<=C<20% Acute Tox. 3 :: C>=26.5% Met. Corr. 1 :: C>=2% EUH071 :: C>=20%	-	-

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Full text of Hazard Statements: see section 16

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

General Advice	Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.
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.
Ingestion	Do NOT induce vomiting. Call a physician or poison control center immediately.
Inhalation	If not breathing, give artificial respiration. 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 to fresh air. Immediate medical attention is required.
Self-Protection of the First Aider	Use personal protective equipment as required. Avoid contact with skin, eyes or clothing.

4.2. Most important symptoms and effects, both acute and delayed

Causes burns by all exposure routes. Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation

4.3. Indication of any immediate medical attention and special treatment needed

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.
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SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media

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Suitable Extinguishing Media

CO₂, dry chemical, dry sand, alcohol-resistant foam.

Extinguishing media which must not be used for safety reasons

No information available.

5.2. Special hazards arising from the substance or mixture

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.).

Hazardous Combustion Products

Nitrogen oxides (NO_x), Thermal decomposition can lead to release of irritating gases and vapors.

5.3. Advice 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

6.1. Personal precautions, protective equipment and emergency procedures

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

Refer to protective measures listed in Sections 7 and 8

6.2. Environmental precautions

Should not be released into the environment. Do not flush into surface water or sanitary sewer system.

6.3. Methods and material for containment and cleaning up

Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. Sweep up and shovel into suitable containers for disposal.

6.4. Reference to other sections

Refer to protective measures listed in Sections 8 and 13.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

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

Hygiene Measures

When using do not eat, drink or smoke. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Provide regular cleaning of equipment, work area and clothing. Keep away from food, drink and animal feeding stuffs. Contaminated work clothing should not be allowed out of the workplace. 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.

7.2. Conditions for safe storage, including any incompatibilities

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

Technical Rules for Hazardous Substances (TRGS) 510 Storage Class (LGK)
(Germany)

Class 5.1B

7.3. Specific end use(s)

Use in laboratories

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Exposure limits

List source(s): **EU** - Commission Directive (EU) 2019/1831 of 24 October 2019 establishing a fifth list of indicative occupational exposure limit values pursuant to Council Directive 98/24/EC and amending Commission Directive 2000/39/EC **UK** - EH40/2005 Work Exposure Limits, Third edition. Published 2018. **IRE** - 2018 Code of Practice for the Chemical Agents Regulations, Schedule 1. Published by the Health and Safety Authority

Component	The United Kingdom	European Union	Ireland
Nitric acid	STEL: 1 ppm 15 min STEL: 2.6 mg/m ³ 15 min	STEL: 1 ppm (15min) STEL: 2.6 mg/m ³ (15min)	STEL: 1 ppm 15 min STEL: 2.6 mg/m ³ 15 min

Biological limit values

This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies

Monitoring methods

BS EN 14042:2003 Title Identifier: Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents.

Derived No Effect Level (DNEL) No information available

Route of exposure	Acute effects (local)	Acute effects (systemic)	Chronic effects (local)	Chronic effects (systemic)
Oral Dermal Inhalation				

Predicted No Effect Concentration (PNEC) No information available.

8.2. Exposure controls

Engineering Measures

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

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Glove material	Breakthrough time	Glove thickness	EU standard	Glove comments
Neoprene gloves	> 480 minutes	0.45 mm	EN 374	As tested under EN374-3 Determination of Resistance to Permeation by Chemicals
Butyl rubber	> 480 minutes	0.56 mm	Level 6	
Viton (R)	> 480 minutes	0.7 mm		

Skin and body protection Long sleeved clothing

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 compatability, 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.

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 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

Environmental exposure controls

Prevent product from entering drains.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical State	Liquid	
Appearance	Clear Colorless Light yellow	
Odor	Strong Acrid	
Odor Threshold	No data available	
Melting Point/Range	-42 °C / -43.6 °F	
Softening Point	No data available	
Boiling Point/Range	122 °C / 251.6 °F	
Flammability (liquid)	No data available	
Flammability (solid,gas)	Not applicable	Liquid
Explosion Limits	No data available	
Flash Point	Not applicable	Method - No information available
Autoignition Temperature	No data available	
Decomposition Temperature	No data available	
pH	1.0	(0.1M)
Viscosity	No data available	
Water Solubility	Miscible	
Solubility in other solvents	No information available	
Partition Coefficient (n-octanol/water)		
Component	log Pow	
Nitric acid	-2.3	
Vapor Pressure	No data available	
Density / Specific Gravity	1.42	

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Bulk Density	Not applicable	Liquid
Vapor Density	No data available	(Air = 1.0)
Particle characteristics	(liquid) Not applicable	

9.2. Other information

Oxidizing Properties	Oxidizer
Evaporation Rate	No information available

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity Yes

10.2. Chemical stability Oxidizer: Contact with combustible/organic material may cause fire.

10.3. Possibility of hazardous reactions

Hazardous Polymerization Hazardous polymerization does not occur.
Hazardous Reactions None under normal processing.

10.4. Conditions to avoid

Incompatible products. Combustible material. Excess heat. Exposure to air or moisture over prolonged periods.

10.5. Incompatible materials

Strong bases. Reducing Agent. Aldehydes. Alcohols. Cyanides. Metals. Finely powdered metals. Organic materials. Ammonia. Combustible material. Strong reducing agents.

10.6. Hazardous decomposition products

Nitrogen oxides (NOx). Thermal decomposition can lead to release of irritating gases and vapors.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Product Information

(a) acute toxicity;

Oral	Based on available data, the classification criteria are not met
Dermal	Based on available data, the classification criteria are not met
Inhalation	Category 3
	Based on available data, the classification criteria are not met

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Nitric acid	-	-	LC50 = 2500 ppm. (Rat) 1h
Water	-	-	-

(b) skin corrosion/irritation; Category 1 A

(c) serious eye damage/irritation; Category 1

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(d) respiratory or skin sensitization;

Respiratory
Skin

Based on available data, the classification criteria are not met
Based on available data, the classification criteria are not met

(e) germ cell mutagenicity;

Based on available data, the classification criteria are not met

(f) carcinogenicity;

Based on available data, the classification criteria are not met
There are no known carcinogenic chemicals in this product

(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;

Target Organs

Based on available data, the classification criteria are not met
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.

11.2. Information on other hazards

Endocrine Disrupting Properties

Assess endocrine disrupting properties for human health. This product does not contain any known or suspected endocrine disruptors.

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Ecotoxicity effects

Do not empty into drains. Large amounts will affect pH and harm aquatic organisms. Contains a substance which is: Harmful to aquatic organisms. The product contains following substances which are hazardous for the environment.

12.2. Persistence and degradability

Persistence

Soluble in water, Persistence is unlikely, based on information available, Miscible with water.

Degradation in sewage treatment plant

No inhibition of bacteria is expected if properly introduced into a biological treatment facility. Neutralization is normally necessary before waste water is discharged into water treatment plants. Contains substances known to be hazardous to the environment or not degradable in waste water treatment plants.

12.3. Bioaccumulative potential

MATERIAL DOES NOT BIOACCUMULATE; Bioaccumulation is unlikely

Component	log Pow	Bioconcentration factor (BCF)
Nitric acid	-2.3	No data available

12.4. Mobility in soil

The product is water soluble, and may spread in water systems. Will likely be mobile in the

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environment due to its water solubility. Highly mobile in soils

12.5. Results of PBT and vPvB assessment

Substance is not considered persistent, bioaccumulative and toxic (PBT) / very persistent and very bioaccumulative (vPvB).

12.6. Endocrine disrupting properties

Endocrine Disruptor Information

This product does not contain any known or suspected endocrine disruptors

12.7. Other adverse effects

Persistent Organic Pollutant Ozone Depletion Potential

This product does not contain any known or suspected substance

This product does not contain any known or suspected substance

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

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

Do not reuse empty containers. Dispose of this container to hazardous or special waste collection point.

European Waste Catalogue (EWC)

According to the European Waste Catalog, Waste Codes are not product specific, but application specific.

Other Information

Waste codes should be assigned by the user based on the application for which the product was used. Do not flush to sewer. 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

IMDG/IMO

<u>14.1. UN number</u>	UN2031
<u>14.2. UN proper shipping name</u>	NITRIC ACID
<u>14.3. Transport hazard class(es)</u>	8
Subsidiary Hazard Class	5.1
<u>14.4. Packing group</u>	II

ADR

<u>14.1. UN number</u>	UN2031
<u>14.2. UN proper shipping name</u>	NITRIC ACID
<u>14.3. Transport hazard class(es)</u>	8
Subsidiary Hazard Class	5.1
<u>14.4. Packing group</u>	II

IATA

<u>14.1. UN number</u>	UN2031
<u>14.2. UN proper shipping name</u>	NITRIC ACID
<u>14.3. Transport hazard class(es)</u>	8
Subsidiary Hazard Class	5.1
<u>14.4. Packing group</u>	II

14.5. Environmental hazards No hazards identified

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14.6. Special precautions for user No special precautions required

14.7. Maritime transport in bulk according to IMO instruments Not applicable, packaged goods

SECTION 15: REGULATORY INFORMATION

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

International Inventories

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

Component	EINECS	ELINCS	NLP	TSCA	DSL	NDSL	PICCS	ENCS	IECSC	AICS	KECL
Nitric acid	231-714-2	-		X	X	-	X	X	X	X	KE-2591 1
Water	231-791-2	-		X	X	-	X	X	X	X	KE-3540 0

Regulation (EC) No 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of dangerous chemicals
Not applicable

National Regulations

WGK Classification See table for values

Component	Germany - Water Classification (VwVwS)	Germany - TA-Luft Class
Nitric acid	WGK1	

UK - Take note of Control of Substances Hazardous to Health Regulations (COSHH) 2002 and 2005 Amendment

15.2. Chemical safety assessment

A Chemical Safety Assessment/Report (CSA/CSR) has been conducted by the manufacturer/importer

SECTION 16: OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3

H290 - May be corrosive to metals
H331 - Toxic if inhaled
H314 - Causes severe skin burns and eye damage
H318 - Causes serious eye damage
EUH071 - Corrosive to the respiratory tract
H272 - May intensify fire; oxidizer

Legend

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/NDSL - 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

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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
Predicted No Effect Concentration (PNEC)
LD50 - Lethal Dose 50%
EC50 - Effective Concentration 50%
POW - Partition coefficient Octanol:Water
vPvB - very Persistent, very Bioaccumulative

ADR - European Agreement Concerning the International Carriage of Dangerous Goods by Road
IMO/IMDG - International Maritime Organization/International Maritime Dangerous Goods Code
OECD - Organisation for Economic Co-operation and Development
BCF - Bioconcentration factor

ICAO/IATA - International Civil Aviation Organization/International Air Transport Association
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

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.

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Revision Date	01-Jan-2021
Revision Summary	Update to CLP Format.

**This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006
COMMISSION REGULATION (EU) 2020/878 amending Annex II to Regulation (EC) No
1907/2006**

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