

Safety data sheet

according to UK REACH

Printing date 15.10.2024

Version number 2 (replaces version 1)

Revision: 15.10.2024

SECTION 1: Identification of the substance/mixture and of the company/undertaking

· Product identifier

· Trade name: Nitric Acid 5% v/v

· Article number: 20-5507-05

· Registration number Mixture

· Relevant identified uses of the substance or mixture and uses advised against

· Product category PC21 Laboratory chemicals

· Application of the substance / the mixture Laboratory chemicals

· Uses advised against

Any use involving aerosol formation or vapour release in excess of the assigned Workplace Exposure Limit where workers are exposed without suitable Respiratory Protective Equipment.

Any use carrying a risk of direct contact with eyes/skin where workers are exposed without adequate personal protective equipment (PPE).

Processes involving the use of incompatible substances - refer to section 10.

Processes involving extreme heat use advised against.

The product is intended exclusively for industrial and professional use.

· Details of the supplier of the safety data sheet

· Supplier:

Severn Biotech Ltd.

Unit 2,

Park Lane,

Kidderminster,

Worcestershire.

DY11 6TJ

UK

Tel: 0044 1562 825286

Fax: 0044 1562 825284

email: info@severnbiotech.com

· Further information obtainable from: Product safety department.

· Emergency telephone number:

Members of the public seeking specific information on poisons should contact:

In England and Wales: NHS 111 - dial 111

In Scotland: NHS 24 - dial 111

SECTION 2: Hazards identification

· Classification of the substance or mixture

Skin Corr. 1A H314 Causes severe skin burns and eye damage.

Eye Dam. 1 H318 Causes serious eye damage.

· Label elements

· Hazard pictograms



GHS05

· Signal word Danger

· Hazard-determining components of labelling:

Nitric acid

· Hazard statements

H314 Causes severe skin burns and eye damage.

· Precautionary statements

P260 Do not breathe dusts or mists.

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].

(Contd. on page 2)

Safety data sheet

according to UK REACH

Printing date 15.10.2024

Version number 2 (replaces version 1)

Revision: 15.10.2024

Trade name: Nitric Acid 5% v/v

(Contd. of page 2)

SECTION 5: Firefighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:** Water
- **For safety reasons unsuitable extinguishing agents:** Foam
- **Special hazards arising from the substance or mixture**
In case of fire, the following can be released:
Nitrogen oxides (NO_x)
Reacts with most metals to produce hydrogen gas, which can form explosive mixtures with air.
If product is allowed to dry, the substance is an oxidiser which may initiate the combustion of other materials.
- **Advice for firefighters**
- **Protective equipment:**
Wear self-contained respiratory protective device.
Wear fully protective suit.
Do not inhale explosion gases or combustion gases.
- **Additional information**
Cool endangered receptacles with water spray.
Collect contaminated fire fighting water separately. It must not enter the sewage system.

SECTION 6: Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
Ensure adequate ventilation
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:**
Do not allow to penetrate the ground/soil.
Do not allow product to reach sewage system or any water course in the undiluted form.
- **Methods and material for containment and cleaning up:**
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.
Ensure adequate ventilation.
Lime slurry can be used to neutralize material (e.g. 10 - 50% potassium carbonate solution or 10 - 30% sodium carbonate solution).
Wash the area with plenty of water.
- **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.

SECTION 7: Handling and storage

- **Precautions for safe handling**
Avoid direct contact (skin/eye contact, ingestion and/or inhalation of fume/mist/dust) with the product in the undiluted form.
Restrict the quantity stored at the work place.
Safety showers and eye wash facilities should be available at the work area.
- **Information about fire - and explosion protection:**
Potentially explosive when mixed with organic substances.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:**
Prevent any seepage into the ground.
Do not store on combustible materials such as wooden floors or wooden pallets.
Store only in the original receptacle.
- **Information about storage in one common storage facility:**
Store away from reducing agents.

(Contd. on page 4)

Safety data sheet according to UK REACH

Printing date 15.10.2024

Version number 2 (replaces version 1)

Revision: 15.10.2024

Trade name: Nitric Acid 5% v/v

(Contd. of page 3)

- Store away from foodstuffs.
- Store away from metals.
- Do not store together with textiles.
- Store away from flammable substances.
- **Further information about storage conditions:**
- Protect from frost.
- Store under lock and key and out of the reach of children.
- Keep container tightly sealed.
- Store in a bunded area.
- **Storage class:** 8 A
- **Specific end use(s)** No further relevant information available.

SECTION 8: Exposure controls/personal protection

- **Control parameters**

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

CAS: 7697-37-2 Nitric acid

WEL	Short-term value: 2.6 mg/m ³ , 1 ppm
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- **DNELs**

CAS: 7697-37-2 Nitric acid

Inhalative	Long-term local effects	1.3 mg/m ³ (general population) 2.6 mg/m ³ (worker)
	Short-term local effects	1.3 mg/m ³ (general population) 2.6 mg/m ³ (worker)

- **PNECs**

- No hazards identified.
- No potential for bioaccumulation.
- **Additional information:** The lists valid during the making were used as basis.

- **Exposure controls**

- **Appropriate engineering controls** No further data; see section 7.
- **Individual protection measures, such as personal protective equipment**
- **General protective and hygienic measures:**
- Do not eat, drink, smoke or sniff while working.
- 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.
- Do not inhale gases / fumes / aerosols.
- A safe system of work must be formulated and followed to ensure safe working with this product. Relevant workers must receive suitable and sufficient training and supervision.
- Take note of assigned Workplace Exposure Limits.
- Ensure that eyewash stations and safety showers are close to the workstation location.
- Depending on the degree of exposure, periodic medical examination is suggested.

- **Respiratory protection:**

- Use suitable respiratory protective device in case of insufficient ventilation.
- 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.
- If respiratory protection is required, institute a complete respiratory protection program including selection, fit testing, training, maintenance and inspection.

- **Hand protection**



- Protective gloves.
- Use gloves tested and approved under appropriate government standards such as NIOSH (US) or EN374 (EU).

(Contd. on page 5)

Safety data sheet according to UK REACH

Printing date 15.10.2024

Version number 2 (replaces version 1)

Revision: 15.10.2024

Trade name: Nitric Acid 5% v/v

(Contd. of page 4)

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

- **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

- Butyl rubber, BR

- PVC gloves

- Fluorocarbon rubber (Viton)

- **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

- **Eye/face protection**



Tightly sealed goggles conforming to EN166.

- **Body protection:**



Acid resistant protective clothing

Do not get on skin or clothing. Wear clothing and footwear that cannot be penetrated by the product. Suitable protective equipment may include: Chemical resistant boots, Chemical resistant apron, Full chemical protective suit with a hood, Chemical protective suit consisting of a jacket and trousers. The jacket should be buttoned up to the neck, sleeves sealed at the gloves, and trouser legs worn outside the boots. These precautions are required to prevent the clothing from accidentally trapping product against the skin.

- **Environmental exposure controls** Do not allow to enter drains, sewers or watercourses.

- **Risk management measures** The operators shall be instructed adequately.

SECTION 9: Physical and chemical properties

- **Information on basic physical and chemical properties**

- **General Information**

- **Physical state**

Fluid

- **Colour:**

Colourless

- **Odour:**

Acidic

- **Odour threshold:**

Not determined.

- **Melting point/freezing point:**

0 °C

- **Boiling point or initial boiling point and boiling range**

~ 100 °C

- **Flammability**

Not applicable.

- **Lower and upper explosion limit**

- **Lower:**

Not determined.

- **Upper:**

Not determined.

- **Flash point:**

Not applicable.

- **Decomposition temperature:**

Not determined.

- **pH at 20 °C**

< 1

- **Viscosity:**

- **Kinematic viscosity**

Not determined.

- **Dynamic:**

Not determined.

- **Solubility**

- **water:**

Fully miscible.

- **Partition coefficient n-octanol/water (log value)**

-2.3 log POW

- **Vapour pressure:**

Not determined.

(Contd. on page 6)

Safety data sheet according to UK REACH

Printing date 15.10.2024

Version number 2 (replaces version 1)

Revision: 15.10.2024

Trade name: Nitric Acid 5% v/v

(Contd. of page 5)

· Density and/or relative density	
· Density at 20 °C:	1.03 g/cm ³
· Relative density	Not determined.
· Vapour density	Not determined.
· Other information	NOTE: The physical data presented above are typical values and should not be construed as a specification.
· Appearance:	
· Form:	Fluid
· Important information on protection of health and environment, and on safety.	
· Ignition temperature:	Product is not self-igniting.
· Explosive properties:	Product does not present an explosion hazard.
· Solvent content:	
· VOC (EC)	0.00 %
· Change in condition	
· Evaporation rate	Not determined.
· Information with regard to physical hazard classes	
· Explosives	Void
· Flammable gases	Void
· Aerosols	Void
· Oxidising gases	Void
· Gases under pressure	Void
· Flammable liquids	Void
· Flammable solids	Void
· Self-reactive substances and mixtures	Void
· Pyrophoric liquids	Void
· Pyrophoric solids	Void
· Self-heating substances and mixtures	Void
· Substances and mixtures, which emit flammable gases in contact with water	Void
· Oxidising liquids	Void
· Oxidising solids	Void
· Organic peroxides	Void
· Corrosive to metals	Void
· Desensitised explosives	Void

SECTION 10: Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** To avoid thermal decomposition do not overheat.
- **Possibility of hazardous reactions**
May produce violent reactions with bases and numerous organic substances including alcohols and amines.
Reacts violently with combustible and reducing materials, causing fire and explosion hazard.
Reacts with metals forming hydrogen.
- **Conditions to avoid** Heat and static discharge.
- **Incompatible materials:**
Reducing agents.
Combustible materials.
Flammable materials
Organic solvents.
Metals and acids.
Substances specifically listed in section 10.3 as incompatible.

(Contd. on page 7)

GB

Safety data sheet

according to UK REACH

Printing date 15.10.2024

Version number 2 (replaces version 1)

Revision: 15.10.2024

Trade name: Nitric Acid 5% v/v

(Contd. of page 6)

· **Hazardous decomposition products:** Nitrogen oxides (NO_x)

SECTION 11: Toxicological information

- **Information on hazard classes as defined in Regulation (EC) No 1272/2008**
- **Acute toxicity** Based on available data, the classification criteria are not met.

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

ATE (Acute Toxicity Estimates)

Inhalative	LC50/4 h	60 mg/l
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- **Primary irritant effect:**
- **Skin corrosion/irritation**
Causes severe skin burns and eye damage.
- **Serious eye damage/irritation**
Causes serious eye damage.
- **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.
- **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.
- **Subacute to chronic toxicity:** May have effects on the teeth, resulting in teeth erosion.
- **Additional toxicological information:**
Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of oesophagus and stomach.
Inhalation may cause lung oedema, but only after initial corrosive effects on eyes and/or airways have become manifest. The symptoms of lung oedema often do not become manifest until a few hours have passed and they are aggravated by physical effort. Rest and medical observation are therefore essential. Immediate administration of an appropriate inhalation therapy by a doctor or a person authorized by him/her, should be considered.
ROUTES OF EXPOSURE: Serious local effects by all routes of exposure.
- **Information on other hazards**

· **Endocrine disrupting properties**

None of the ingredients are listed.

SECTION 12: Ecological information

· **Toxicity**· **Aquatic toxicity:**

CAS: 7697-37-2 Nitric acid

EC50 (96 h)	900 mg/l (Bacteria)
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- **Persistence and degradability** biodegradable
- **Bioaccumulative potential** Product is not expected to bioaccumulate.
- **Mobility in soil** No further relevant information available.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Endocrine disrupting properties**
The product does not contain substances with endocrine disrupting properties.
- **Other adverse effects**
- **Additional ecological information:**
- **General notes:**
Must not reach sewage water or drainage ditch undiluted or unneutralised.
Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water

(Contd. on page 8)

Safety data sheet according to UK REACH

Printing date 15.10.2024

Version number 2 (replaces version 1)

Revision: 15.10.2024

Trade name: Nitric Acid 5% v/v

(Contd. of page 7)

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

SECTION 13: Disposal considerations

· **Waste treatment methods**

· **Recommendation**

Recommended Hierarchy of Controls:

- Minimise waste;
- Reuse if not contaminated;
- Recycle, if possible; or
- Safe disposal (if all else fails).

Must not be disposed together with household garbage. Do not allow product to reach sewage system.

Contact waste processors for recycling information.

Used, degraded or contaminated product may be classified as hazardous waste. Anyone classifying hazardous waste and determining its fate must be qualified in accordance with state and international legislation.

· **Uncleaned packaging:**

· **Recommendation:**

Empty contaminated packagings thoroughly. They may be recycled after thorough and proper cleaning.

Container remains hazardous when empty. Continue to observe all precautions.

Containers, even those that are "empty," may contain residues that can develop hazardous gases and vapours upon heating. Do not cut, drill, grind, weld, or perform similar operations on or near empty containers.

Disposal must be made according to official regulations.

Do not mix with other waste streams.

· **Recommended cleansing agents:** Large quantities of water

SECTION 14: Transport information

· **UN number or ID number**

· **ADR/RID/ADN, IMDG, IATA** UN2031

· **UN proper shipping name**

· **ADR/RID/ADN** UN2031 NITRIC ACID solution

· **IMDG, IATA** NITRIC ACID solution

· **Transport hazard class(es)**

· **ADR/RID/ADN**



· **Class**

8 (C1) Corrosive substances.

· **Label**

8

· **IMDG, IATA**



· **Class**

8 Corrosive substances.

· **Label**

8

· **Packing group**

· **ADR/RID/ADN, IMDG, IATA** II

· **Environmental hazards:**

· **Marine pollutant:** No

(Contd. on page 9)

Safety data sheet

according to UK REACH

Printing date 15.10.2024

Version number 2 (replaces version 1)

Revision: 15.10.2024

Trade name: Nitric Acid 5% v/v

(Contd. of page 8)

- | | |
|--|---|
| · Special precautions for user | Warning: Corrosive substances. |
| · Hazard identification number (Kemler code): | 80 |
| · Hazchem Code: | 2R |
| · EMS Number: | F-A,S-B |
| · Segregation groups | (SGG1a) Strong acids |
| · Stowage Category | D |
| · Segregation Code | SG36 Stow "separated from" SGG18-alkalis.
SG49 Stow "separated from" SGG6-cyanides |

- | | |
|--|-----------------|
| · Maritime transport in bulk according to IMO instruments | Not applicable. |
|--|-----------------|

· **Transport/Additional information:**

- | | |
|-----------------------------------|---|
| · ADR/RID/ADN | 1L |
| · Limited quantities (LQ) | Code: E2 |
| · Excepted quantities (EQ) | Maximum net quantity per inner packaging: 30 ml
Maximum net quantity per outer packaging: 500 ml |
| · Transport category | 2 |
| · Tunnel restriction code | E |

- | | |
|-----------------------------------|---|
| · IMDG | 1L |
| · Limited quantities (LQ) | Code: E2 |
| · Excepted quantities (EQ) | Maximum net quantity per inner packaging: 30 ml
Maximum net quantity per outer packaging: 500 ml |

- | | |
|---------------------------------|-------------------------------------|
| · UN "Model Regulation": | UN 2031 NITRIC ACID SOLUTION, 8, II |
|---------------------------------|-------------------------------------|

SECTION 15: Regulatory information

- Safety, health and environmental regulations/legislation specific for the substance or mixture
- Poisons Act

· **Regulated explosives precursors**

CAS: 7697-37-2	Nitric acid	3%
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· **Regulated poisons**

None of the ingredients are listed.

· **Reportable explosives precursors**

None of the ingredients are listed.

· **Reportable poisons**

None of the ingredients are listed.

· **GHS label elements**

The product is classified and labelled according to the Globally Harmonised System (GHS).

· **Hazard pictograms**



GHS05

- **Signal word** Danger

· **Hazard-determining components of labelling:**

Nitric acid

(Contd. on page 10)

GB

Safety data sheet

according to UK REACH

Printing date 15.10.2024

Version number 2 (replaces version 1)

Revision: 15.10.2024

Trade name: Nitric Acid 5% v/v

(Contd. of page 9)

- **Hazard statements**

H314 Causes severe skin burns and eye damage.

- **Precautionary statements**

P260 Do not breathe dusts or mists.

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].

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.

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

- **Directive 2012/18/EU**

- **Named dangerous substances - ANNEX I** None of the ingredients are listed.

- **Chemical safety assessment:** A Chemical Safety Assessment has been carried out.

SECTION 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.

This Safety Data Sheet is in compliance with Regulation (EC) No 1907/2006, Article 31 as amended by Regulation (EU) 2020/878.

- **Relevant phrases**

H272 May intensify fire; oxidiser.

H314 Causes severe skin burns and eye damage.

H331 Toxic if inhaled.

EUH071 Corrosive to the respiratory tract.

- **Training hints**

This product should only be handled by workers who have received sufficient training in the safe handling and use of chemical products.

- **Department issuing SDS:** Product safety department.

- **Abbreviations and acronyms:**

ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

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

VOC: Volatile Organic Compounds (USA, EU)

DNEL: Derived No-Effect Level (UK REACH)

PNEC: Predicted No-Effect Concentration (UK REACH)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

ATE: Acute toxicity estimate values

Ox. Liq. 2: Oxidizing liquids – Category 2

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

- *** Data compared to the previous version altered.**