

Safety data sheet according to 1907/2006/EC, Article 31

revised on: 16.05.2023

Version number 16 (replaces version 15)

Creation Date: 29.11.2017

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

· 1.1 Product identifier

· Trade name: Nitric acid

· **Article number:** 827, 837, 838, 865

· **CAS Number:** 7697-37-2 (nitric acid)

· **Registration number** This product is a mixture. UK REACH registration numbers see section 3.

· **UFI:** EVU1-90YN-R007-P5J8

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

· Life cycle stages

F Formulation or re-packing

IS Use at industrial Sites

· Sector of Use

SU3 Industrial uses: Uses of substances as such or in preparations at industrial sites

SU9 Manufacture of fine chemicals

SU10 Formulation [mixing] of preparations and/or re-packaging (excluding alloys)

SU24 Scientific research and development

· Product category

PC19 Intermediate

PC20 Processing aids such as pH-regulators, flocculants, precipitants, neutralization agents

PC21 Laboratory chemicals

PC29 Pharmaceuticals

PC39 Cosmetics, personal care products

PC40 Extraction agents

· Process category

PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions.

PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions

PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition

PROC4 Chemical production where opportunity for exposure arises

PROC5 Mixing or blending in batch processes

PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)

PROC15 Use as laboratory reagent

· Environmental release category

ERC1 Manufacture of the substance

ERC2 Formulation into mixture

ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article)

ERC6a Use of intermediate

· Application of the substance / the mixture

Reagent for analysis

Laboratory chemicals

Commercial use

· 1.3 Details of the supplier of the safety data sheet

· Manufacturer/Supplier:

Th. Geyer GmbH & Co. KG

Dornierstr. 4 – 6

D-71272 Renningen

Tel.: +49(0)7159-1637-0, Fax:+49 (0)7159/18417

www.thgeyer.de

sicherheitsdatenblaetter@thgeyer.de

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- **Further information obtainable from:** Product management department
- **1.4 Emergency telephone number:**
National Poisons Information Service
City Hospital
Dudley Road
Birmingham B18 7QH
Tel.:Emergency: (00 44) 87 06 00 62 66
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

- **2.1 Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**



GHS03 flame over circle

Ox. Liq. 3 H272 May intensify fire; oxidiser.



GHS06 skull and crossbones

Acute Tox. 3 H331 Toxic if inhaled.



GHS05 corrosion

Met. Corr. 1 H290 May be corrosive to metals.

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

Eye Dam. 1 H318 Causes serious eye damage.

- **2.2 Label elements**
- **Labelling according to Regulation (EC) No 1272/2008**
The product is classified and labelled according to the GB CLP regulation.
- **Hazard pictograms**



GHS03



GHS05



GHS06

- **Signal word** Danger
- **Hazard-determining components of labelling:**
nitric acid
- **Hazard statements**
H272 May intensify fire; oxidiser.
H290 May be corrosive to metals.
H331 Toxic if inhaled.
H314 Causes severe skin burns and eye damage.
- **Precautionary statements**
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P280 Wear protective gloves/protective clothing/eye protection/face protection.

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- P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
 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.
 P403+P233 Store in a well-ventilated place. Keep container tightly closed.
 P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

- **Additional information:**

EUH071 Corrosive to the respiratory tract.

- **2.3 Other hazards**

- **Results of PBT and vPvB assessment**

- **PBT:** Not applicable.

- **vPvB:** Not applicable.

SECTION 3: Composition/information on ingredients

- **3.2 Mixtures**

- **Description:** Mixture of substances listed below with nonhazardous additions.

- **Dangerous components:**

CAS: 7697-37-2 EINECS: 231-714-2	nitric acid Ox. Liq. 3, H272 Acute Tox. 3, H331 Skin Corr. 1A, H314 EUH071 ATE: LC50 inhalative: 2.65 mg/l Specific concentration limits: Ox. Liq. 3; H272: C ≥ 65 % Skin Corr. 1A; H314: C ≥ 20 % Skin Corr. 1B; H314: 5 % ≤ C < 20 %	≥65-<70%
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- **Additional information:** For the wording of the listed hazard phrases refer to section 16.

SECTION 4: First aid measures

- **4.1 Description of first aid measures**

- **General information:**

Immediately remove any clothing soiled by the product.

First aider needs to protect himself.

- **After inhalation:**

Supply fresh air.

In case of breathing difficulties or respiratory arrest, initiate artificial respiration.

Call a doctor immediately.

- **After skin contact:**

Immediately wash with water and soap and rinse thoroughly.

Remove contaminated clothing.

Call a doctor immediately.

- **After eye contact:**

Keep eyelids open and rinse copiously with clean running water for at least 10 minutes.

Consult an ophthalmologist immediately.

Remove any contact lenses if possible.

Continue rinsing.

- **After swallowing:**

Rinse out mouth and then drink plenty of water.

Drink plenty of water and provide fresh air. Call for a doctor immediately.

Do not induce vomiting (risk of perforation).

Call a doctor immediately.

No neutralisation attempts.

- **Information for doctor:** Please observe safety data sheet/label.

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

Irritation and caustic effect
 Causes skin irritation
 Causes severe eye irritation.
 Coughing
 Breathing difficulty
 Vomiting
 Methaemoglobinaemia

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

No further relevant information available.

SECTION 5: Firefighting measures

· 5.1 Extinguishing media

· **Suitable extinguishing agents:** Use fire extinguishing methods suitable to surrounding conditions.

· **For safety reasons unsuitable extinguishing agents:** Water with full jet.

· 5.2 Special hazards arising from the substance or mixture

Oxidising property.
 In case of fire, the following can be released:
 Nitrogen oxides (NOx)
 Ambient fire may liberate hazardous vapours.

· 5.3 Advice for firefighters

· Protective equipment:

Wear self-contained respiratory protective device.
 Do not inhale explosion gases or combustion gases.
 Avoid face and eye contact.

· Additional information

Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.
 Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6: Accidental release measures

· 6.1 Personal precautions, protective equipment and emergency procedures

Wear protective equipment. Keep unprotected persons away.
 Corrosive to metals.

· **6.2 Environmental precautions:** Do not allow to enter sewers/surface or ground water.

· 6.3 Methods and material for containment and cleaning up:

Cover drains.
 Prevent area-wide spreading (e.g. by damming or oil booms).
 Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
 Dispose contaminated material as waste according to section 13.
 Dispose of the material collected according to regulations.

· 6.4 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

· 7.1 Precautions for safe handling

Ensure good ventilation/exhaustion at the workplace.
 Prevent formation of aerosols.

· **Information about fire - and explosion protection:** No special measures required.

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- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** Store only in the original receptacle.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**
Keep container tightly sealed.
Store in a place accessible only to authorised persons.
Store receptacle in a well ventilated area.
- **Storage class:** 5.1B
- **7.3 Specific end use(s)** No further relevant information available.

SECTION 8: Exposure controls/personal protection

· 8.1 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

· **PNECs**

- values relevant to the environment
- PNEC 0.176 mg/l freshwater short-term (single)
- PNEC 0.018 mg/l seawater short-term (one-off)
- PNEC 1.35 mg/l Wastewater treatment plant (STP) short-term (one-off)
- PNEC 6.97 mg/kg freshwater sediment short-term (single)
- PNEC 0.697 mg/kg marine sediment short-term (single)
- PNEC 1.29 mg/kg soil short-term (single)
- **Additional information:** The lists valid during the making were used as basis.

· 8.2 Exposure controls

- **Appropriate engineering controls** No further data; see section 7.
- **Individual protection measures, such as personal protective equipment**
- **General protective and hygienic measures:**
The usual precautionary measures are to be adhered to when handling chemicals.
Wash hands before breaks and at the end of work.
- **Respiratory protection:** Not required.
- **Hand protection**



Protective gloves

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.

FKM (fluororubber)

Material thickness > 0,7 mm

· **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.

Level 6 for applications > 480 min

· **Eye/face protection**

Face protection

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Gauze goggles



Tightly sealed goggles

· **Body protection:**

Protective work clothing (e. g. safety shoes EN ISO 20345, long-sleeved protective working garments).

SECTION 9: Physical and chemical properties

· 9.1 Information on basic physical and chemical properties

· General Information

· Physical state	Fluid
· Colour:	Colourless
· Odour:	Pungent
· Odour threshold:	Not determined.
· Melting point/freezing point:	-32 °C
· Boiling point or initial boiling point and boiling range	~122 °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)	Not determined.
· Vapour pressure at 20 °C:	56 hPa
· Density and/or relative density	
· Density at 20 °C:	1.4 g/cm ³
· Relative density	Not determined.
· Vapour density	Not determined.

· 9.2 Other information

· Appearance:	
· Form:	Fluid
· Important information on protection of health and environment, and on safety.	
· Ignition temperature:	Product is not selfigniting.
· Explosive properties:	Product does not present an explosion hazard.
· Solvent content:	
· Water:	≥30.0 %
· VOC (EC)	0.00 %
· Solids content:	≥65–<70 %
· Change in condition	
· Evaporation rate	Not determined.

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· 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	May intensify fire; oxidiser.
· Oxidising solids	Void
· Organic peroxides	Void
· Corrosive to metals	May be corrosive to metals.
· Desensitised explosives	Void

SECTION 10: Stability and reactivity

- **10.1 Reactivity**
Oxidising.
Oxidising.
Corrosive to metals.
- **10.2 Chemical stability** Stable with proper storage and handling.
- **10.3 Possibility of hazardous reactions**
Violent reactions possible with:
Acetone, Aldehydes, Alkalis, Alkali metals, Alcohols, Formic acid, Amines, Ammonia, Aniline, Combustible materials, Dichloromethane, Alkaline earth metal, Acetic anhydride, Hydrazine, Hydrocarbons, Metal powders, Nitriles, Reducing agents, Strong alkali, Hydrogen peroxide.
=> Explosion hazard
- **10.4 Conditions to avoid**
Direct sunlight.
Heating
- **10.5 Incompatible materials:**
Metals
Pulp
- **10.6 Hazardous decomposition products:** On fire: see chapter 5

SECTION 11: Toxicological information

- **11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008**
- **Acute toxicity** Toxic if inhaled.

· LD/LC50 values relevant for classification:

ATE (Acute Toxicity Estimates)

Inhalative	LC50	>3.79–≤4.08 mg/l (ATE)
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CAS: 7697-37-2 nitric acid

Inhalative	LC50	2.65 mg/l (ATE)
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- **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.

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- **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.
- **11.2 Information on other hazards**

· Endocrine disrupting properties
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None of the ingredients is listed.

SECTION 12: Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **12.2 Persistence and degradability** No further relevant information available.
- **12.3 Bioaccumulative potential** No further relevant information available.
- **12.4 Mobility in soil** No further relevant information available.
- **12.5 Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **12.6 Endocrine disrupting properties**
The product does not contain substances with endocrine disrupting properties.
- **12.7 Other adverse effects**
- **Additional ecological information:**
- **General notes:**
Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
Rinse off of bigger amounts into drains or the aquatic environment may lead to decreased pH-values. A low pH-value harms aquatic organisms. In the dilution of the use-level the pH-value is considerably increased, so that after the use of the product the aqueous waste, emptied into drains, is only low water-dangerous.

SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**
Observe local (country-specific) regulations and laws
This material and its container must be disposed of as hazardous waste. Dispose of contents/container in accordance with local/regional/national/international regulations.
- **Recommendation**
Must not be disposed together with household garbage. Do not allow product to reach sewage system.
Chemicals must be disposed of in compliance with the respective national regulations.

· European waste catalogue	
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HP2	Oxidising
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HP8	Corrosive
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- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleansing agents:** Water, if necessary together with cleansing agents.

SECTION 14: Transport information

- | | |
|--|--------|
| <ul style="list-style-type: none"> · 14.1 UN number or ID number · ADR, IMDG, IATA | UN2031 |
|--|--------|

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<ul style="list-style-type: none"> · 14.2 UN proper shipping name · ADR · IMDG, IATA 	<p>2031 NITRIC ACID solution NITRIC ACID solution</p>
<ul style="list-style-type: none"> · 14.3 Transport hazard class(es) · ADR 	<p>8 (C1) Corrosive substances. 8</p>
<ul style="list-style-type: none"> · IMDG 	<p>8 Corrosive substances. 8/5.1</p>
<ul style="list-style-type: none"> · IATA 	<p>8 Corrosive substances. 8 (5.1)</p>
<ul style="list-style-type: none"> · 14.4 Packing group · ADR, IMDG, IATA 	<p>II</p>
<ul style="list-style-type: none"> · 14.5 Environmental hazards: 	<p>Not applicable.</p>
<ul style="list-style-type: none"> · 14.6 Special precautions for user · Hazard identification number (Kemler code): · EMS Number: · Segregation groups · Stowage Category · Segregation Code 	<p>Warning: Corrosive substances. 885 F-A,S-Q (SGG1a) Strong acids D SG6 Segregation as for class 5.1 SG16 Stow "separated from" class 4.1 SG17 Stow "separated from" class 5.1 SG19 Stow "separated from" class 7 SG36 Stow "separated from" SGG18-alkalis. SG49 Stow "separated from" SGG6-cyanides</p>
<ul style="list-style-type: none"> · 14.7 Maritime transport in bulk according to IMO instruments 	<p>Not applicable.</p>
<ul style="list-style-type: none"> · Transport/Additional information: 	<p>1L Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml</p>
<ul style="list-style-type: none"> · ADR · Limited quantities (LQ) · Excepted quantities (EQ) · Transport category · Tunnel restriction code 	<p>2 E</p>

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· IMDG	
· Limited quantities (LQ)	1L
· Excepted quantities (EQ)	Code: E2 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

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

· **Inventory of Hazardous Chemicals**

None of the ingredients is listed.

· **Directive 2012/18/EU**

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

· **Seveso category**

H2 ACUTE TOXIC

P8 OXIDISING LIQUIDS AND SOLIDS

· **Qualifying quantity (tonnes) for the application of lower-tier requirements** 50 t

· **Qualifying quantity (tonnes) for the application of upper-tier requirements** 200 t

· **REGULATION (EC) No 1907/2006 ANNEX XVII** Conditions of restriction: 3

· **DIRECTIVE 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment – Annex II**

None of the ingredients is listed.

· **REGULATION (EU) 2019/1148**

· **Annex I - RESTRICTED EXPLOSIVES PRECURSORS (Upper limit value for the purpose of licensing under Article 5(3))**

None of the ingredients is listed.

· **Annex II - REPORTABLE EXPLOSIVES PRECURSORS**

None of the ingredients is listed.

· **Regulation (EC) No 273/2004 on drug precursors**

None of the ingredients is listed.

· **Regulation (EC) No 111/2005 laying down rules for the monitoring of trade between the Community and third countries in drug precursors**

None of the ingredients is listed.

· **National regulations:**

· **Information about limitation of use:**

Employment restrictions concerning juveniles must be observed.

Employment restrictions concerning pregnant and lactating women must be observed.

· **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not 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. Application, use and handling of our products take place out of our control and are solely your responsibility.

· **Relevant phrases**

H272 May intensify fire; oxidiser.

H314 Causes severe skin burns and eye damage.

H331 Toxic if inhaled.

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EUH071 Corrosive to the respiratory tract.

· **Department issuing SDS:** Product management· **Contact:** Product management· **Version number of previous version:** 15· **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

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

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)

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

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

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

E