

Revised on: 26. 06.2020 Nitric acid Standard volumetric solution 0.1 M (0.1 N)

Created on: 26. 06.2020

1. Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Trade name: Nitric acid Standard volumetric solution 0.1 M (0.1 N)

Article number: LC-6019

Registration number: This product is a mixture. REACH Registration Number see section 3.

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

No further relevant information available.

Application of the substance / the mixture:

Reagent for analysis

1.3. Details of the supplier of the safety data sheet

Manufacturer/Supplier:

neoFroxx GmbH

Marie-Curie-Str. 3

D-64683 Einhausen

info@neofroxx.com

Further information obtainable from:

Dep. Quality Control

1.4. Emergency telephone number

+49 (6251) 989 24 - 0 (during normal business hours)

2. Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008:

Corrosive to metals, Category 1, H290

Skin corrosion, Category 1B, H314

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2. Label elements

Labelling according to Regulation (EC) No 1272/2008:

The product is classified and labelled according to the CLP regulation.

Hazard pictograms:



Signal word: Danger

Hazard statements:

H290 May be corrosive to metals.

H314 Causes severe skin burns and eye damage.

EUH071 Corrosive to the respiratory tract.

Precautionary statements:

Prevention

P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response

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.

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P308 + P310 IF exposed or concerned: immediately call a POISON CENTER or doctor/ physician.

- 2.3. Other hazards
None known.

3. Composition / information on ingredients

Chemical nature: Aqueous solution

- 3.1. Substance
Not applicable

- 3.2. Mixture

Hazardous components (REGULATION (EC) No 1272/2008):

Chemical name (Concentration):

nitric acid ($\geq 10\%$ - $< 20\%$)

Substance does not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, Annex XIII.

CAS-No.: 7697-37-2

Registration number:

01-2119487297-23-XXXX

Classification:

Oxidizing liquid, Category 2, H272

Corrosive to metals, Category 1, H290

Acute toxicity, Category 1, H330

Skin corrosion, Category 1A, H314

Additional information: For the wording of the listed hazard phrases refer to section 16.

4. First aid measures

- 4.1. Description of first aid measures

General advice: First aider needs to protect himself.

After inhalation: fresh air. Call in physician.

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower.

Call a physician immediately.

After eye contact: rinse out with plenty of water. Call in ophthalmologist. Remove contact lenses.

Immediately call an ophthalmologist.

After swallowing: immediately make victim drink water (two glasses at most), avoid vomiting (risk of perforation). Call a physician immediately. Do not attempt to neutralise.

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

Risk of blindness!

The following applies to nitrites/nitrates in general: methaemoglobinaemia after the uptake of large quantities.

Irritation and corrosion, Cough, Shortness of breath, Bloody vomiting, death

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

No further relevant information available.

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5. Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media:

For this substance/mixture no limitations of extinguishing agents are given.

5.2. Special hazards arising from the substance or mixture

Non-combustible.

Ambient fire may liberate hazardous vapours.

Fire may cause evolution of:

nitrous gases, nitrogen oxides

5.3. Advice for firefighters

Special protective equipment for firefighters:

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

Further information:

Suppress (knock down) gases/vapours/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Do not breathe vapours, aerosols. Avoid substance contact.

Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders:

Protective equipment see section 8.

6.2. Environmental precautions:

Do not let product enter drains.

6.3. Methods and material for containment and cleaning up:

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up with liquid-absorbent and neutralising material. Dispose of properly. Clean up affected area.

6.4. Reference to other sections

See Section 13 for disposal information.

7. Handling and storage

7.1. Precautions for safe handling

Advice on safe handling:

Observe label precautions.

Hygiene measures:

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

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7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers:

No metal or light-weight-metal containers.

Storage conditions:

Tightly closed.

Recommended storage temperature see product label.

7.3. Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

8. Exposure controls / personal protection

8.1. Control parameters

Derived No Effect Level (DNEL):

nitric acid (7697-37-2)

Worker DNEL, longterm Local effects inhalation 1,3 mg/m³

Predicted No Effect Concentration (PNEC):

nitric acid (7697-37-2)

PNEC no data available

8.2. Exposure controls

Engineering measures:

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

See section 7.1.

Individual protection measures:

Protective clothing needs to be selected specifically for the workplace, depending on concentrations and quantities of the hazardous substances handled. The chemical resistance of the protective equipment should be enquired at the respective supplier.

Eye/face protection:

Tightly fitting safety goggles

Hand protection:

full contact::

Glove material: Nitrile rubber

Glove thickness: 0,11 mm

Break through time: 480 min

splash contact::

Glove material: Nitrile rubber

Glove thickness: 0,11 mm

Break through time: 480 min

The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374, for example KCL 741 Dermatril® L (full contact), KCL 741 Dermatril® L (splash contact).

The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types.

This recommendation applies only to the product stated in the safety data sheet (>,<) supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions

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deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Other protective equipment:

Acid-resistant protective clothing

Respiratory protection:

required when vapours/aerosols are generated.

Recommended Filter type: filter E-(P2)

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

Environmental exposure controls:

Do not let product enter drains.

9. Physical and chemical properties

9.1. Information on basic physical and chemical properties

Form: liquid

Colour: colourless

Odour: odourless

Odour Threshold: Not applicable

pH: < 1 at 20 °C

Melting point: ca. -10 °C

Boiling point: ca. 101 °C at 1.013 hPa

Flash point: No information available.

Evaporation rate: No information available.

Flammability (solid, gas): No information available.

Lower explosion limit: No information available.

Upper explosion limit: No information available.

Vapour pressure: No information available.

Relative vapour density: No information available.

Density: 1,07 g/cm³ at 20 °C

Relative density: No information available.

Water solubility: at 20 °C soluble

Partition coefficient: n-octanol/water: No information available.

Auto-ignition temperature: No information available.

Decomposition temperature: No information available.

Viscosity, dynamic: No information available.

Explosive properties: Not classified as explosive.

Oxidizing properties: Oxidizing potential

9.2. Other information

Corrosion: May be corrosive to metals.

10. Stability and reactivity

10.1. Reactivity

Oxidizing agents

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10.2. Chemical stability

The product is chemically stable under standard ambient conditions (room temperature).

10.3. Possibility of hazardous reactions

Risk of explosion with:

Risk of ignition or formation of inflammable gases or vapours with:

Metals, Alkali metals, Alkaline earth metals, metal alloys, metallic oxides, Alcohols, Aldehydes, Amines, anhydrides, anilines, Ammonia, alkalines, hydrides, halogen compounds, nonmetallic oxides, nonmetallic halides, nonmetallic hydrogen compounds, nonmetals, phosphides, nitrides, lithium silicide, hydrogen peroxide, organic combustible substances, oxidisable substances, organic solvent, Ketones, Nitriles, organic nitro compounds, hydrazine and derivatives, acetylidene, acids, Fluorine

Generates dangerous gases or fumes in contact with:

Copper, Mercury

10.4. Conditions to avoid

no information available

10.5. Incompatible materials:

Cellulose, Metals

Contact with metals may lead to the formation of nitrous gases and hydrogen.

10.6. Hazardous decomposition products:

in the event of fire: See section 5.

11. Toxicological information

11.1. Information on toxicological effects

Mixture

Acute oral toxicity:

Symptoms: If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the oesophagus and the stomach.

Acute inhalation toxicity:

Symptoms: mucosal irritations, Cough, Shortness of breath, Possible damages:., damage of respiratory tract, After a latency period:., Inhalation may lead to the formation of oedemas in the respiratory tract.

Acute dermal toxicity:

This information is not available.

Skin irritation:

Mixture causes burns.

Eye irritation:

Mixture causes serious eye damage. Risk of blindness!

Sensitisation:

This information is not available.

Germ cell mutagenicity:

This information is not available.

Carcinogenicity:

This information is not available.

Reproductive toxicity:

This information is not available.

Teratogenicity:

This information is not available.

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Specific target organ toxicity - single exposure:

The substance or mixture is not classified as specific target organ toxicant, single exposure.

Specific target organ toxicity - repeated exposure:

The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Aspiration hazard:

Based on available data the classification criteria are not met.

11.2. Further information

After uptake:

Bloody vomiting, strong pain (risk of perforation!), tissue damage, death

The following applies to nitrites/nitrates in general: methaemoglobinaemia after the uptake of large quantities.

Other dangerous properties can not be excluded.

Handle in accordance with good industrial hygiene and safety practice.

Components:

nitric acid

Acute inhalation toxicity

LC50 Rat: > 2,65 mg/l; 4 h ; vapour

OECD Test Guideline 403

Germ cell mutagenicity

Genotoxicity in vitro

Ames test

Salmonella typhimurium

Result: negative

Method: OECD Test Guideline 471

12. Ecological information

Mixture

12.1. Toxicity

No information available.

12.2. Persistence and degradability

Biodegradability:

The methods for determining the biological degradability are not applicable to inorganic substances.

12.3. Bioaccumulative potential

No information available.

12.4. Mobility in soil

No information available.

12.5. Results of PBT and vPvB assessment

Substance(s) in the mixture do(es) not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, Annex XIII, or a PBT/vPvB assessment was not conducted.

12.6. Other adverse effects

Additional ecological information:

Biological effects:

Harmful effect due to pH shift. Forms corrosive mixtures with water even if diluted. Hazard for drinking water supplies. Does not cause biological oxygen deficit.

Discharge into the environment must be avoided.

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Components:

nitric acid

Biodegradability:

The methods for determining the biological degradability are not applicable to inorganic substances.

Partition coefficient: n-octanol/water:

log Pow: -2,3

OECD Test Guideline 107

Bioaccumulation is not expected.

Substance does not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, Annex XIII.

Henry constant:

2482 Pa*m³/mol

Method: (calculated)

(Lit.) Distribution preferentially in air.

13. Disposal considerations

13.1. Waste treatment methods

Recommendation:

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

Uncleaned packaging:

Recommendation: Disposal must be made according to official regulations.

Recommended cleansing agents: Water, if necessary together with cleansing agents.

14. Transport information

Land transport (ADR/RID):

14.1 UN number	UN 2031
14.2 Proper shipping name	NITRIC ACID
14.3 Class	8
14.4 Packing group	II
14.5 Environmentally hazardous	--
14.6 Special precautions for user	yes
Tunnel restriction code	E

Inland waterway transport (ADN):

Not relevant

Air transport (IATA):

14.1 UN number	UN 2031
14.2 Proper shipping name	NITRIC ACID
14.3 Class	8
14.4 Packing group	II
14.5 Environmentally hazardous	--
14.6 Special precautions for user	yes
	Not permitted for transport

Sea transport (IMDG):

14.1 UN number	UN 2031
14.2 Proper shipping name	NITRIC ACID NOT MORE THAN 20%

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14.3 Class	8
14.4 Packing group	II
14.5 Environmentally hazardous	--
14.6 Special precautions for user	yes
EmS	F-A S-B

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not relevant

15. Regulatory information

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

EU regulations:

Major Accident Hazard Legislation:

SEVESO III

Not applicable

Occupational restrictions:

Take note of Dir 94/33/EC on the protection of young people at work.

Regulation (EC) No 1005/2009 on substances that deplete the ozone layer:

not regulated

Regulation (EC) No 850/2004 of the European Parliament and of the Council of 29 April 2004 on persistent organic pollutants and amending Directive 79/117/EEC:

not regulated

Substances of very high concern (SVHC):

This product does not contain substances of very high concern according to Regulation (EC) No 1907/2006 (REACH), Article 57 above the respective regulatory concentration limit of ≥ 0.1 % (w/w).

National legislation:

Storage class: 8B

15.2. Chemical safety assessment:

A Chemical Safety Assessment has not been carried out.

16. Other information

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

H272 May intensify fire; oxidizer.

H290 May be corrosive to metals.

H314 Causes severe skin burns and eye damage.

H330 Fatal if inhaled.

Training advice:

Provide adequate information, instruction and training for operators.

Labelling:

Signal word: Danger

Hazard statements:

H290 May be corrosive to metals.

H314 Causes severe skin burns and eye damage.

Precautionary statements:

Prevention

P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

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Response

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.

P308 + P310 IF exposed or concerned: immediately call a POISON CENTER or doctor/ physician.

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.

Abbreviations and acronyms:

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

ICAO: International Civil Aviation Organisation

ADR: Accord européen sur le transport 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)

DNEL: Derived No-Effect Level (REACH)

PNEC: Predicted No-Effect Concentration (REACH)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

Met. Corr. 1: Corrosive to metals – Category 1

Skin Corr. 1B: Skin corrosion/irritation – Category 1B

STOT SE 3: Specific target organ toxicity (single exposure) – Category 3