

1 Identification

Product identifier

Trade name: **Stock solution 100 000 mg/L**

Synonym: *for TOC*

Article number: *CAY451V10C10AAE*

Application of the substance / the mixture *Laboratory chemicals*

Details of the supplier of the safety data sheet

Manufacturer/Supplier:

*Endress+Hauser
Conducta GmbH+Co. KG
Dieselstraße 24
D-70839 Gerlingen*

Further information obtainable from:

*Phone: +49 (0)7156 209-10117
E-Mail: MSDS.PCC@endress.com*

Emergency telephone number: *+1 604 682 5050*

* 2 Hazard identification

Classification of the substance or mixture



GHS05 Corrosion

Skin Corrosion - Category 1A

H314 Causes severe skin burns and eye damage.

Serious Eye Damage - Category 1

H318 Causes serious eye damage.



GHS07

*Specific Target Organ Toxicity - Single Exposure -
Category 3*

H335 May cause respiratory irritation.

Label elements

GHS label elements

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

Hazard pictograms



GHS05 GHS07

Signal word *Danger*

Hazard-determining components of labelling:

nitric acid

citric acid

Hazard statements

Causes severe skin burns and eye damage.

May cause respiratory irritation.

Precautionary statements

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

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Immediately call a POISON CENTER/doctor.

Specific treatment (see on this label).

Store locked up.

Trade name: Stock solution 100 000 mg/L

(Contd. of page 1)

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

Other hazards

The product does not contain any organic halogen compounds (AOX), nitrates, heavy metal compounds or formaldehydes.

3 Composition/Information on ingredients**Chemical characterisation: Mixtures**

Description: Mixture of substances listed below with nonhazardous additions.

Dangerous components:		
CAS: 77-92-9	citric acid ⚠ Eye Irritation - Category 2A, H319; Specific Target Organ Toxicity - Single Exposure - Category 3, H335	10-30% *
CAS: 7697-37-2	nitric acid ⚠ Oxidizing Liquids - Category 2, H272; ⚠ Acute Toxicity (Inhalation) - Category 1, H330; ⚠ Skin Corrosion - Category 1A, H314	1-5% *

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

4 First-aid measures**Description of first aid measures****General information:** Immediately remove any clothing soiled by the product.**After inhalation:** In case of unconsciousness place patient stably in side position for transportation.**After skin contact:**

Immediately wash with water and soap and rinse thoroughly.

Immediately rinse with water.

After eye contact: Rinse opened eye for several minutes under running water. Then consult a doctor.**After swallowing:** Drink plenty of water and provide fresh air. Call for a doctor immediately.**Information for doctor:****Most important symptoms and effects, both acute and delayed**

No further relevant information available.

Indication of any immediate medical attention and special treatment needed

No further relevant information available.

5 Fire-fighting measures**Extinguishing media****Suitable extinguishing agents:**CO₂, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.**For safety reasons unsuitable extinguishing agents:** no further information**Special hazards arising from the substance or mixture**

During heating or in case of fire poisonous gases are produced.

Advice for firefighters No further relevant information available.**Protective equipment:** Mount respiratory protective device.**6 Accidental release measures****Personal precautions, protective equipment and emergency procedures**

Mount respiratory protective device.

Wear protective equipment. Keep unprotected persons away.

Wear protective clothing.

Environmental precautions:

Dilute with plenty of water.

(Contd. on page 3)

— CDN —

Trade name: Stock solution 100 000 mg/L

(Contd. of page 2)

*Do not allow to enter sewers/ surface or ground water.***Methods and material for containment and cleaning up:***Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).**Use neutralising agent.**Dispose contaminated material as waste according to item 13.**Ensure adequate ventilation.***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.***7 Handling and storage****Precautions for safe handling***Do not dry clean dust covered objects and floors. Wash thoroughly with plenty of water.**Ensure good ventilation/exhaustion at the workplace.**Prevent formation of aerosols.***Information about fire - and explosion protection:** *Keep respiratory protective device available.***Storage:****Requirements to be met by storerooms and receptacles:** *No special requirements.***Information about storage in one common storage facility:** *Not required.***Further information about storage conditions:** *Keep container tightly sealed.***Storage class:** 8 B**Specific end use(s)** *No further relevant information available.***8 Exposure controls/ Personal protection****Additional information about design of technical facilities:** *No further data; see item 7.***Control parameters****Ingredients with limit values that require monitoring at the workplace:****CAS: 7697-37-2 nitric acid**

EL STEL: 4 ppm

TWA: 2 ppm

EV STEL: 10 mg/m³, 4 ppmTWA: 5 mg/m³, 2 ppm**DNELs****CAS: 7697-37-2 nitric acid**Inhalative DNEL long-term 1.3 mg/m³ (worker) (local effects)**Additional information:** *The lists valid during the making were used as basis.***Exposure controls****Personal protective equipment:****General protective and hygienic measures:***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.**Avoid contact with the eyes and skin.***Respiratory protection:***In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.*

(Contd. on page 4)

Trade name: Stock solution 100 000 mg/L

(Contd. of page 3)

Protection of hands:*Protective gloves*

To avoid skin problems reduce the wearing of gloves to the required minimum.
Only use chemical-protective gloves with CE-labelling of category III.
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Material of gloves*Nitrile rubber, NBR**Chloroprene rubber, CR*

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.

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 protection:*Tightly sealed goggles***Body protection:** *Protective work clothing***9 Physical and chemical properties****Information on basic physical and chemical properties****General Information****Appearance:**

Form:	<i>Fluid</i>
Colour:	<i>Colourless</i>
Odour:	<i>Odourless</i>
Odour threshold:	<i>Not determined.</i>
pH-value at 20 °C:	<i>1</i>

Change in condition

Melting point/freezing point:	<i>Undetermined.</i>
Initial boiling point and boiling range:	<i>100 °C</i>

Flash point: *Not applicable.*

Flammability (solid, gas): *Not applicable.*

Decomposition temperature: *Not determined.*

Auto-ignition temperature: *Product is not selfigniting.*

Explosive properties: *Product does not present an explosion hazard.
Not determined.*

Explosion limits:

Lower:	<i>Not determined.</i>
Upper:	<i>Not determined.</i>

Vapour pressure at 20 °C: *23 hPa*

Density at 20 °C: *1.124 g/cm³*

Relative density *Not determined.*

(Contd. on page 5)

Trade name: Stock solution 100 000 mg/L

(Contd. of page 4)

Vapour density	<i>Not determined.</i>
Evaporation rate	<i>Not determined.</i>
Solubility in / Miscibility with water:	<i>Fully miscible.</i>
Partition coefficient: n-octanol/water:	<i>Not determined.</i>
Viscosity:	
Dynamic:	<i>Not determined.</i>
Kinematic:	<i>Not determined.</i>
Solvent content:	
Water:	<i>>70.0 %</i>
Solids content:	<i>0.0 %</i>
Other information	<i>No further relevant information available.</i>

10 Stability and reactivity

Reactivity *No further relevant information available.*

Chemical stability

Thermal decomposition / conditions to be avoided:
No decomposition if used according to specifications.

Possibility of hazardous reactions *No dangerous reactions known.*

Conditions to avoid *No further relevant information available.*

Incompatible materials: *No further relevant information available.*

Hazardous decomposition products: *No dangerous decomposition products known.*

11 Toxicological information

Information on toxicological effects

Acute toxicity

LD/LC50 values relevant for classification:

CAS: 77-92-9 citric acid

Oral	LD50	5,040 mg/kg (Mouse)
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Primary irritant effect:

Skin corrosion/irritation *Strong caustic effect on skin and mucous membranes.*

Serious eye damage/irritation

Strong caustic effect.

Strong irritant with the danger of severe eye injury.

Respiratory or skin sensitisation *No sensitising effects known.*

Additional toxicological information:

The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:

Corrosive

Irritant

Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

12 Ecological information

Toxicity

Aquatic toxicity: *No further relevant information available.*

Persistence and degradability *No further relevant information available.*

Behaviour in environmental systems:

Bioaccumulative potential *No further relevant information available.*

Mobility in soil *No further relevant information available.*

(Contd. on page 6)

Trade name: Stock solution 100 000 mg/L

(Contd. of page 5)

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.

Must not reach sewage water or drainage ditch undiluted or unneutralised.

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.

Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

Other adverse effects No further relevant information available.

13 Disposal considerations**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

UN-Number

IMDG, IATA

UN2031

UN proper shipping name

ADR

UN2031 NITRIC ACID

IMDG

NITRIC ACID

IATA

Nitric acid

Transport hazard class(es)

ADR



Class

8 (C1) Corrosive substances.

Label

8

IMDG, IATA



Class

8 Corrosive substances.

Label

8

Packing group

ADR, IMDG, IATA

II

Environmental hazards:

Not applicable.

Special precautions for user

Warning: Corrosive substances.

Hazard identification number (Kemler code):

80

EMS Number:

F-A,S-B

Segregation groups

Strong acids

Stowage Category

D

(Contd. on page 7)

Trade name: Stock solution 100 000 mg/L

(Contd. of page 6)

Segregation Code SG36 Stow "separated from" SGG18-alkalis.
SG49 Stow "separated from" SGG6-cyanides

Transport in bulk according to Annex II of Marpol and the IBC Code Not applicable.

Transport/Additional information:

ADR

Limited quantities (LQ) 1L
Transport category 2
Tunnel restriction code E

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, 8, II

***15 Regulatory information**

Safety, health and environmental regulations/legislation specific for the substance or mixture
GHS label elements

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

Hazard pictograms



GHS05 GHS07

Signal word *Danger*

Hazard-determining components of labelling:

nitric acid

citric acid

Hazard statements

Causes severe skin burns and eye damage.

May cause respiratory irritation.

Precautionary statements

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

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Immediately call a POISON CENTER/doctor.

Specific treatment (see on this label).

Store locked up.

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

National regulations:

Waterhazard class: *Water hazard class 1 (Self-assessment): slightly hazardous for water.*

Chemical safety assessment: *A Chemical Safety Assessment has not been carried out.*

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.

Department issuing SDS: PCC-TWR

Contact: *MSDS.pcc@endress.com*

Date of the latest revision of the safety data sheet 03/31/2022 / 3

Abbreviations and acronyms:

ICAO: International Civil Aviation Organisation

(Contd. on page 8)

— CDN —

Safety Data Sheet

according to HPR, Schedule 1

Printing date 03/31/2022

Version 4

Revision: 03/31/2022

Trade name: Stock solution 100 000 mg/L

(Contd. of page 7)

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)

DNEL: Derived No-Effect Level (REACH)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

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

— CDN —