

Safety Data Sheet

according to Regulations REACH 1907/2006/EC

REF: 931304

Printing date: 03.08.2026

VISOCOLOR Reagent case, new

Date of issue: 10.07.2026

Page: 1/39

Version: 2.2.5.38

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

1.1 Product identifier

REF

931304

Product name

VISOCOLOR Reagent case, new

REACH Registration number(s):

see SECTION 3.1/3.2 or

A registration number for the substance(s) does not exist because the annual tonnage does not require registration or the substance or its use is excluded from registration.

1 x 100 mL TL AL 7

1 x 10 mL Ind. m

1 x 15 mL Ind. H 20 F

1 x 100 mL TL H 20

1 x 30 mL O₂-1

1 x 30 mL O₂-2

2 x 30 mL O₂-3

1 x 10 mL O₂-4

1 x 100 mL TL SA 10

1 x 30 mL NH₄-1

1 x 2,5 g NH₄-2

1 x 10 mL NH₄-3

1 x 30 mL NO₂-1

1 x 5 g NO₂-2

2 x 24 mL pH-1

1 x 25 mL PO₄-1

1 x 25 mL PO₄-2

UFI: 3QVT-431H-M20A-FW67

UFI: HMKU-631R-Q20H-4XSP

UFI: NGWT-P383-C20S-DYET

UFI: KKWT-53XG-P209-2A0V

UFI: DWQT-S3D9-F20M-DSJM

UFI: AADU-73NS-C20E-U17Y

UFI: JKDU-R3QY-820W-T205

UFI: J6EU-93JR-E20C-FF2M

UFI: DCEU-93XJ-120C-S47R

UFI: QFEU-T3MX-A20U-EFTT

UFI: NJEU-A3AA-N20A-3TDV

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

Relevant identified uses

Product for analytical use.

Exposure Scenario Classification according REACH, RIP 3.2 Codes: SU 0-2, PC 21, PROC 15, AC 0

The exposure scenario is integrated into sections 1-16.

Uses advised against

not described

1.3 Details of the supplier of the safety data sheet

Manufactured by:

MACHEREY-NAGEL GmbH & Co. KG

Valenciennner Str. 11, 52355 Düren, Germany

Phone: +49 2421 969 0

E-mail: sds@mn-net.com (msds@mn-net.com)

1.4 Emergency telephone number

Outside Germany (DE): Call your regional Poisons Information Service or call local Life Saving Service.

DE: Gemeinsames Giftinformationszentrum (GGIZ)

99089 Erfurt tel. +49 361 730 730, <<https://www.ggiz-erfurt.de>>

You find our current versions of SDS in Internet:

<<https://www.mn-net.com/SDS>>

SECTION 2: Hazard identification

2.0 Classification of the complete product according to Regulation (EC) 1272/2008



GHS02



GHS05



GHS07



GHS09

Signal word

DANGER

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Hazard identification	Hazard classes/categories
H225	Flam. Liq. 2
H290	Met. Corr. 1
H302	Acute Tox. 4 oral
H314	Skin Corr. 1 B
H411	Aquatic Chronic 2
EUH031	-

2.1 Classification of the substance or mixture according to Regulation (EC) 1272/2008

15 mL Ind. H 20 F



GHS02



GHS07

Signal word

WARNING

Hazard identification	Hazard classes/categories
H226	Flam. Liq. 3
H315	Skin Irrit. 2
H319	Eye Irrit. 2

25 mL PO 4 -1



GHS07

Signal word

WARNING

Hazard identification	Hazard classes/categories
H315	Skin Irrit. 2
H319	Eye Irrit. 2

30 mL O 2 -2



GHS05



GHS07

Signal word

DANGER

Hazard identification	Hazard classes/categories
H314	Skin Corr. 1 B
H319	Eye Irrit. 2

30 mL NH 4 -1



GHS05

Signal word

DANGER

Hazard identification	Hazard classes/categories
H314	Skin Corr. 1 B

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10 mL NH₄-3



GHS02



GHS05

Signal word

DANGER

Hazard identification

Hazard classes/categories

H226

Flam. Liq. 3

H314

Skin Corr. 1 B

H412

Aquatic Chronic 3

100 mL TL H 20

Signal word

Do not need labelling as hazardous

No hazard class

-

5 g NO₂-2

Signal word

Do not need labelling as hazardous

No hazard class

-

2,5 g NH₄-2

Signal word

Do not need labelling as hazardous

No hazard class

-

10 mL Ind. m



GHS02

Signal word

DANGER

Hazard identification

Hazard classes/categories

H225

Flam. Liq. 2

24 mL pH-1



GHS02

Signal word

DANGER

Hazard identification

Hazard classes/categories

H225

Flam. Liq. 2

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30 mL NO₂-1



GHS05

Signal word

DANGER

Hazard identification

Hazard classes/categories

H290

Met. Corr. 1

100 mL TL AL 7

Signal word

Do not need labelling as hazardous

-

No hazard class

30 mL O₂-3



GHS05

Signal word

DANGER

Hazard identification

Hazard classes/categories

H314

Skin Corr. 1 B

25 mL PO₄-2



GHS05

Signal word

DANGER

Hazard identification

Hazard classes/categories

EUH031

-

H318

Eye Dam. 1

100 mL TL SA 10

Signal word

Do not need labelling as hazardous

-

No hazard class

30 mL O₂-1



GHS07



GHS09

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Signal word

WARNING

Hazard identification

Hazard classes/categories

H302

Acute Tox. 4 oral

H411

Aquatic Chronic 2

10 mL O₂-4

Signal word

Do not need labelling as hazardous

-

No hazard class

List of H phrases: see section 16.2

2.2 Label elements according regulation (EC) 1272/2008

According **CLP directive** inner packages must be only labelled with GHS symbol(s) and product identifier(s) (EU 1272/2008 Annex I - 1.5.1.2). Harmful chemicals/mixtures with signal word: **WARNING** and highly flammable chemicals/mixtures must not be labelled with H and P phrases **until 125 mL** (EU 1272/2008 Annex I - 1.5.2). Metal corrosive solutions **do not have to** be labelled with GHS symbol, signal word, H and P phrases **until 125 mL** (EU 1272/2008 Annex I - 1.5.2.1.3).

15 mL Ind. H 20 F



GHS02



GHS07

Signal word: WARNING

25 mL PO₄-1



GHS07

Signal word: WARNING

30 mL O₂-2



GHS05

Signal word: DANGER

H314

Causes severe skin burns and eye damage.

P260sh, P264, P280sh, P303+361+353, P305+351+338, P310, P405, P501

Do not breathe dust/vapours. Wash hands thoroughly after handling. Wear protective gloves/eye protection. 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. Store locked up. Dispose of contents/container to regulated waste treatment.

30 mL NH₄-1



GHS05

Signal word: DANGER

H314

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Causes severe skin burns and eye damage.

P260sh, P264, P280sh, P303+361+353, P305+351+338, P310, P405, P501

Do not breathe dust/vapours. Wash hands thoroughly after handling. Wear protective gloves/eye protection. 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. Store locked up. Dispose of contents/container to regulated waste treatment.

10 mL NH₄-3



GHS02



GHS05

Signal word: DANGER

H314

Causes severe skin burns and eye damage.

P260sh, P264, P280sh, P303+361+353, P305+351+338, P310, P405, P501

Do not breathe dust/vapours. Wash hands thoroughly after handling. Wear protective gloves/eye protection. 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. Store locked up. Dispose of contents/container to regulated waste treatment.

100 mL TL H 20

Do not need labelling as hazardous

Signal word: -

5 g NO₂-2

Do not need labelling as hazardous

Signal word: -

2,5 g NH₄-2

Do not need labelling as hazardous

Signal word: -

10 mL Ind. m



GHS02

Signal word: DANGER

24 mL pH-1



GHS02

Signal word: DANGER

30 mL NO₂-1



GHS05

Signal word: DANGER

100 mL TL AL 7

Do not need labelling as hazardous

Signal word: -

30 mL O₂-3

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GHS05

Signal word: DANGER

H314

Causes severe skin burns and eye damage.

P260sh, P264, P280sh, P303+361+353, P305+351+338, P310, P405, P501

Do not breathe dust/vapours. Wash hands thoroughly after handling. Wear protective gloves/eye protection. 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. Store locked up. Dispose of contents/container to regulated waste treatment.

25 mL PO₄-2



GHS05

Signal word: DANGER

H318

Causes serious eye damage.

P280sh, P305+351+338, P310

Wear protective gloves/eye protection. 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.

100 mL TL SA 10

Do not need labelling as hazardous

Signal word: -

30 mL O₂-1



GHS07



GHS09

Signal word: WARNING

10 mL O₂-4

Do not need labelling as hazardous

Signal word: -

Label elements of the complete product



GHS02



GHS05



GHS09

Signal word: DANGER

H314

Causes severe skin burns and eye damage.

P260sh, P264, P280sh, P303+361+353, P305+351+338, P310, P405, P501

Do not breathe dust/vapours. Wash hands thoroughly after handling. Wear protective gloves/eye protection. 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. Store locked up. Dispose of contents/container to regulated waste treatment.

2.3 Other hazards

Possible hazards from physicochemical properties

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Generally in the case of pH values are less than 2 or higher than 11.5 then it is corrosive. Flammable properties. H290 "May be corrosive to metals." has only relevance for higher concentrations and larger amounts. The labelling GHS05 would be creating an "OVERLABELLING" (see GHS Directive 1272/2008/EC Annex I, chapter 1.5.2.1.3., until 125 mL no labelling necessary).

Information pertaining to particular risks to human and possible symptoms

Causes varying degrees of acid burns on the skin, to the eyes and to the mucous membranes and wounds which do not heal quickly depending on the concentration, temperature and the exposure time. Vapours especially which steam from hot liquids and mist can have a severe irritant effect upon the eyes and the respiratory organs. Cause after oral intake, impairments of health when ingested in small quantities.

Information pertaining to particular risks to the environment

Should not be released into the environment.

PBT: not applicable

vPvB: not applicable

Possible endocrine disrupting effects

no data available

Other hazards

Contains an odor intensive reagent.

SECTION 3: Composition / information on ingredients

3.1 Substances or 3.2 Mixtures

15 mL Ind. H 20 F

Substance name: *triethanolamine*

CAS No.: 102-71-6

Substance rating: H315, Skin Irrit. 2, H319, Eye Irrit. 2

Formula: $C_6H_{15}NO_3$

Pseudonym (de): 2,2',2''-Nitrilotriethanol, TEA, Tris(2-hydroxyethyl)amin

REACH Reg. No.: 01-2119486482-31-xxxx

Dual-use: The application of this chemical is exempt from the regulation 2017/2268/EU (see IC350 remark 4).

EC No.: 203-049-8

Concentration: 20 - <45 %

acc. CLP (GHS): H315, Skin Irrit. 2, H319, Eye Irrit. 2

Substance name: *ethanol*

CAS No.: 64-17-5

(denatured with 1% 2-butanone / 1% 2-propanol)

Substance rating: H225, Flam. Liq. 2

Formula: C_2H_6O ; C_2H_5OH

Pseudonym (de): Äthylalkohol, vergällter Spiritus

REACH Reg. No.: 01-2119457610-43-xxxx

EC No.: 200-578-6

Indice No.: 603-002-00-5

Concentration: 20 - <35 %

acc. CLP (GHS): H226, Flam. Liq. 3

Substance name: *indicator dye(s)*

CAS No.: -

Substance rating: No criteria for classification or naming of chemical not required.

Concentration: 0,1 - <1 %

acc. CLP (GHS): The criteria for classification are not fulfilled.

25 mL PO 4 -1



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Substance name: *ammonium heptamolybdate*
CAS No.: 12054-85-2

Substance rating: No criteria for classification or naming of chemical not required.
Formula: $H_{24}Mo_7N_6O_{24}$
Pseudonym (de): Ammoniummolybdat
REACH Reg. No.: 01-2119498057-28-xxxx
EC No.: 234-722-4
Concentration: 0,5 - <2 % Correlation factor: x 0.58 (= %Mo)
The classification refers to the weight percentage of the metal (according to CLP regulation 2008/1272/EG Annex VI, 1.1.3.2 Note 1)
acc. CLP (GHS): The criteria for classification are not fulfilled.

Substance name: *sulfuric acid*
CAS No.: 7664-93-9

Substance rating: H315, Skin Irrit. 2, H319, Eye Irrit. 2
Formula: $H_2SO_4 \cdot H_2O$
REACH Reg. No.: 01-2119458838-20-xxxx
EC No.: 231-639-5 Indice No.: 016-020-00-8
Concentration: 5 - <15 %
acc. CLP (GHS): H315, Skin Irrit. 2, H319, Eye Irrit. 2

30 mL O₂-2

Substance name: *sodium hydroxide solution*
CAS No.: 1310-73-2

Substance rating: H314, Skin Corr. 1 B
Formula: $NaOH \cdot H_2O$
Pseudonym (de): Natronlauge
REACH Reg. No.: 01-2119457892-27-xxxx
EC No.: 215-185-5 Indice No.: 011-002-00-6
Concentration: 20 - <35 %
acc. CLP (GHS): H314, Skin Corr. 1 B

Substance name: *potassium iodide*
CAS No.: 7681-11-0

Substance rating: H319, Eye Irrit. 2
Formula: KI
Pseudonym (de): Iodkalium
REACH Reg. No.: YES, confidential
EC No.: 231-659-4
Concentration: 10 - <20 %
acc. CLP (GHS): H319, Eye Irrit. 2

30 mL NH₄-1

Substance name: *sodium hydroxide solution*
CAS No.: 1310-73-2

Substance rating: H314, Skin Corr. 1 B
Formula: $NaOH \cdot H_2O$
Pseudonym (de): Natronlauge
REACH Reg. No.: 01-2119457892-27-xxxx
EC No.: 215-185-5 Indice No.: 011-002-00-6
Concentration: 5 - <10 %
acc. CLP (GHS): H314, Skin Corr. 1 B

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Substance name: *trisodium citrate dihydrate*
CAS No.: 6132-04-3

Substance rating: No criteria for classification or naming of chemical not required.
Formula: $C_6H_5Na_3O_7 \cdot 2H_2O$
Pseudonym (de): Na-citrat, E331
REACH Reg. No.: 01-2119457027-40-xxxx
EC No.: 612-118-5
Concentration: 1 - <10 %
acc. CLP (GHS): The criteria for classification are not fulfilled.

10 mL NH₄-3

Substance name: *sodium nitroprusside*
CAS No.: 13755-38-9

Substance rating: H301, Acute Tox. 3 oral
Formula: $Na_2[Fe(CN)_5NO] \cdot 2H_2O$
Pseudonym (de): Natriumpentacyanonitrosylferrat(II)
EC No.: 238-373-9
Concentration: 1 - <5 %
acc. CLP (GHS): The criteria for classification are not fulfilled.

Substance name: *ethanol*
CAS No.: 64-17-5
(denatured with 1% 2-butanone / 1% 2-propanol)

Substance rating: H225, Flam. Liq. 2
Formula: C_2H_6O ; C_2H_5OH
Pseudonym (de): Äthylalkohol, vergällter Spiritus
REACH Reg. No.: 01-2119457610-43-xxxx
EC No.: 200-578-6
Concentration: 35 - <55 %
acc. CLP (GHS): H226, Flam. Liq. 3

Indice No.: 603-002-00-5

Substance name: *thymol*
CAS No.: 89-83-8

Substance rating: H302, Acute Tox. 4 oral, H314, Skin Corr. 1 B, H411, Aquatic Chronic 2
Formula: $C_{10}H_{14}O$
Pseudonym (de): 1-Methyl-3-hydroxy-4-isopropylbenzol
REACH Reg. No.: 01-2119511177-46-xxxx
EC No.: 201-944-8
Concentration: 5 - <10 %
acc. CLP (GHS): H314, Skin Corr. 1 B, H412, Aquatic Chronic 3

Indice No.: 604-032-00-1

100 mL TL H 20

Substance name: *ethylendinitrilo tetraacetic acid, di Na-salt (EDTA-Na)*
CAS No.: 6381-92-6

Substance rating: H332, Acute Tox. 4 inh., H373, resp. irrit. STOT SE 3
Formula: $C_{10}H_{14}N_2Na_2O_8 \cdot 2H_2O$
Pseudonym (de): Titriplex® III
EC No.: 205-358-3
Concentration: 0,1 - <1 %
acc. CLP (GHS): The criteria for classification are not fulfilled.

5 g NO₂-2



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Substance name: *N-(1-naphthyl)-ethylenediamine dihydrochloride*
CAS No.: 1465-25-4

Substance rating: H315, Skin Irrit. 2, H319, Eye Irrit. 2
Formula: $C_{12}H_{16}Cl_2N_2$
EC No.: 215-981-2
Concentration: 1 - <10 %
acc. CLP (GHS): The criteria for classification are not fulfilled.

Substance name: *citric acid*
CAS No.: 77-92-9

Substance rating: H319, Eye Irrit. 2, H335, resp. irrit. STOT SE 3
Formula: $C_6H_8O_7$
Pseudonym (de): Zitronensäure
REACH Reg. No.: 01-2119457026-42-xxxx
EC No.: 201-069-1
Concentration: 1 - <10 %
acc. CLP (GHS): The criteria for classification are not fulfilled.

2,5 g NH₄-2

Substance name: *dichloroisocyanuric acid, Na salt*
CAS No.: 2893-78-9

Substance rating: H272, Ox. Liq. 2, H302, Acute Tox. 4 oral, H319, Eye Irrit. 2, H335, resp. irrit. STOT SE 3, H410, Aquatic Chronic 1, EUH031, not defined
Formula: $C_3Cl_2N_3NaO_3$
Pseudonym (de): 1,3-Dichlor-5H-(1,3,5)-triazin-2,4,6-trion
REACH Reg. No.: 01-2119489371-33-xxxx
EC No.: 220-767-7
Concentration: 3 - <10 %
acc. CLP (GHS): The criteria for classification are not fulfilled.

Indice No.: 613-030-01-7

Substance name: *sodium chloride*
CAS No.: 7647-14-5

Substance rating: No criteria for classification or naming of chemical not required.
Formula: NaCl
Pseudonym (de): Kochsalz
REACH Reg. No.: exempt, Annex V
EC No.: 231-598-3
Concentration: 80 - <100 %
acc. CLP (GHS): The criteria for classification are not fulfilled.

10 mL Ind. m

Substance name: *methyl red (pH indicator)*
CAS No.: 493-52-7

Substance rating: No criteria for classification or naming of chemical not required.
Formula: $C_{15}H_{15}N_3O_2$
Pseudonym (de): 4-(Dimethylamino)-azobenzol-1,2'-carbonsäure
EC No.: 207-776-1
Concentration: 0,1 - <1 %
acc. CLP (GHS): The criteria for classification are not fulfilled.

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Substance name: *ethanol*
CAS No.: 64-17-5
(denatured with 1% 2-butanone / 1% 2-propanol)
Substance rating: H225, Flam. Liq. 2
Formula: C_2H_6O ; C_2H_5OH
Pseudonym (de): Äthylalkohol, vergällter Spiritus
REACH Reg. No.: 01-2119457610-43-xxxx
EC No.: 200-578-6
Concentration: 55 - <75 %
acc. CLP (GHS): H225, Flam. Liq. 2

Indice No.: 603-002-00-5

Substance name: *indicator dye(s)*
CAS No.: -

Substance rating: No criteria for classification or naming of chemical not required.
Concentration: 0,1 - <1 %
acc. CLP (GHS): The criteria for classification are not fulfilled.

24 mL pH-1

Substance name: *ethanol*
CAS No.: 64-17-5
(denatured with 1% 2-butanone / 1% 2-propanol)
Substance rating: H225, Flam. Liq. 2
Formula: C_2H_6O ; C_2H_5OH
Pseudonym (de): Äthylalkohol, vergällter Spiritus
REACH Reg. No.: 01-2119457610-43-xxxx
EC No.: 200-578-6
Concentration: 90 - <100 %
acc. CLP (GHS): H225, Flam. Liq. 2

Indice No.: 603-002-00-5

Substance name: *phenolphthalein (pH indicator)*
CAS No.: 77-09-8

Substance rating: H341, Muta. 2, H350, Carc. 1 B, H361f, Repr. 2
Formula: $C_{20}H_{14}O_4$
Pseudonym (de): Indikator pH 8,2-9,8
REACH Reg. No.: 01-2119498295-24-0000
SVHC listed: listed (19/12/2011) Cand. Lst. REACH Art59(10)
EC No.: 201-004-7
Specific concentration limit: Carc. 1B; H350: $C \geq 1\%$
Concentration: 0 - <0,1 %
acc. CLP (GHS): The criteria for classification are not fulfilled.

Indice No.: 604-076-00-1

Substance name: *indicator dye(s)*
CAS No.: -

Substance rating: No criteria for classification or naming of chemical not required.
Concentration: 0 - <0,1 %
acc. CLP (GHS): The criteria for classification are not fulfilled.

30 mL NO₂-1

Substance name: *sulfanilamide*
CAS No.: 63-74-1

Substance rating: No criteria for classification or naming of chemical not required.
Formula: $C_6H_8N_2O_2S$
Pseudonym (de): 4-Aminobenzolsulfonamid
EC No.: 200-563-4
Concentration: 1 - <10 %
acc. CLP (GHS): The criteria for classification are not fulfilled.

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Substance name: *o-phosphoric acid*
CAS No.: 7664-38-2

Substance rating: H290, Met. Corr. 1, H302, Acute Tox. 4 oral, H314, Skin Corr. 1 B
Formula: $H_3PO_4 \cdot H_2O$
Pseudonym (de): Orthophosphorsäure, E338
REACH Reg. No.: 01-2119485924-24-xxxx
EC No.: 231-633-2
Concentration: 1 - <10 %
acc. CLP (GHS): H290, Met. Corr. 1

Indice No.: 015-011-00-6

100 mL TL AL 7

Substance name: *hydrochloric acid*
CAS No.: 7647-01-0

Substance rating: H314, Skin Corr. 1 A, H335, resp. irrit. STOT SE 3
Formula: $HCl \cdot H_2O$
Pseudonym (de): Chlorwasserstoffsäure
REACH Reg. No.: 01-2119484862-27-xxxx
EC No.: 231-595-7
Specific concentration limit: Eye Irrit. 2; H319: 10 % ≤ C < 25 % - Skin Irrit. 2; H315: 10 % ≤ C < 25 % - Skin Corr. 1B; H314: C ≥ 25 % - STOT SE 3; H335: C ≥ 10 %
Concentration: 0,1 - <1 %
acc. CLP (GHS): The criteria for classification are not fulfilled.

Indice No.: 017-002-01-X

30 mL O₂-3

Substance name: *sulfuric acid*
CAS No.: 7664-93-9

Substance rating: H314, Skin Corr. 1 B
Formula: $H_2SO_4 (\cdot H_2O)$
REACH Reg. No.: 01-2119458838-20-xxxx
EC No.: 231-639-5
Specific concentration limit: Eye Irrit. 2; H319: 5 % ≤ C < 15 % - Skin Irrit. 2; H315: 5 % ≤ C < 15 % - Skin Corr. 1A; H314: C ≥ 15 %
Concentration: 51 - <65 %
acc. CLP (GHS): H314, Skin Corr. 1 B

Indice No.: 016-020-00-8

25 mL PO₄-2

Substance name: *sodium disulfite*
CAS No.: 7681-57-4

Substance rating: H302, Acute Tox. 4 oral, H318, Eye Dam. 1, EUH031, not defined
Formula: $Na_2O_5S_2$
Pseudonym (de): Disulfit
REACH Reg. No.: 01-2119531326-45-xxxx
EC No.: 231-673-0
Concentration: 10 - <25 %
acc. CLP (GHS): H318, Eye Dam. 1, EUH031,

Indice No.: 016-063-00-2

100 mL TL SA 10

Substance name: *sodium thiosulfate*
CAS No.: 7772-98-7

Substance rating: No criteria for classification or naming of chemical not required.
Formula: $Na_2O_3S_2$
REACH Reg. No.: 01-2119531537-38-xxxx
EC No.: 231-867-5
Concentration: 0,1 - <1 %
acc. CLP (GHS): The criteria for classification are not fulfilled.

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30 mL O₂-1

Substance name: *manganese chloride*
CAS No.: 7773-01-5

Substance rating: H301, Acute Tox. 3 oral, H411, Aquatic Chronic 2

Formula: MnCl₂

Pseudonym (de): Mangandichlorid

REACH Reg. No.: 01-2119934899-15-xxxx

EC No.: 231-869-6

Concentration: 25 - <50 %

Correlation factor: x 0.44 (= %Mn)

The classification refers to the weight percentage of the metal (according to CLP regulation 2008/1272/EG Annex VI, 1.1.3.2 Note 1)

acc. CLP (GHS): H302, Acute Tox. 4 oral, H411, Aquatic Chronic 2

10 mL O₂-4

Substance name: *starch*
CAS No.: 9005-84-9

Substance rating: No criteria for classification or naming of chemical not required.

Formula: (C₆H₁₀O₅)_n

REACH Reg. No.: exempt, Annex IV

EC No.: 232-686-4, 232-679-6

Concentration: 0 - <1 %

acc. CLP (GHS): The criteria for classification are not fulfilled.

3.3 Remarks

When not listed, mixtures are added with water [CAS No. 7732-18-5] to 100%.

List of H and P phrases: see section 16.2.

SECTION 4: First aid measures

4.1 Description of first aid measures

Place insured person out of danger zone to fresh air immediately. Ensure quiet, warmth, and provide resuscitation if necessary. If necessary contact medical advice. Remove contaminated clothing. Show product package, packing insert and this material safety data sheet to the doctor.

4.1.1 After SKIN Contact

Remove contaminated clothing immediately. Rinse the affected skin or mucous membrane thoroughly for min. 15 minutes under running water. (If possible) use soap. Avoid neutralisation. Then apply a loose bandage.

4.1.2 After EYE Contact

After contact with the eyes rinse thoroughly under running water with the eyelid wide open for min. 10 minutes with eye washing bottle, eye douche or running water (protect intact eye). Before (if possible) apply eye drops Proxymetacaine 0.5%, if the opening the eyelid convulsion is painful. Further treatment to be carried out by an eye specialist.

4.1.3 After INHALATION of vapours

After inhalation of foam or vapour fresh air should be inhaled. Keep airways free. If vomiting and if insensible place patient in recovery position and keep airways free. ---

4.1.4 After ORAL Intake

After oral intake lots of water with activated charcoal supplement should be drunk after it has been ingested. Do not induce vomiting under any circumstances. Do not make any efforts to neutralise it. Contact medical advice for possible consequences.

4.2 Most important symptoms and effects, both acute and delayed

Rapid penetration and destruction of the skin. Especially in the heated form.
Causes severe skin burns and eye damage.

4.3 Indication of any immediate medical attention and special treatment needed

CORROSIVE DAMAGE: After SKIN CONTACT rinse with water for a long time. Efforts to neutralise the substance can frequently make matters worse. Apply glucocorticosteroides following inflammatory reactions. After EYE CONTACT rinse immediately with plenty of water for a long time. Eyelid convulsion measures. Name the corrosive chemical. Further treatment must to be carried out by an eye specialist. After INTAKE administer aluminium oxide drug suspensions. Administer a prophylaxis to counter pulmonary oedema following the INGESTION of corrosive aerosols. In the event of RESPIRATORY DISTRESS ensure that the patient inhales oxygen. ---

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SECTION 5: Firefighting measures

5.1 Extinguishing media

5.1.1 Suitable extinguishing media

Fire extinguishers appropriate to the fire classification, and, if applicable, a fire blanket must be available in a prominent location in the work area. All extinguishers like FOAM, WATER SPRAY, DRY POWDER, CARBON DIOXIDE can be used.

5.1.2 Unsuitable extinguishing media

no data available

5.2 Special hazards arising from the substance or mixture

DANGER: Highly flammable (GHS regulation). Forms explosive vapour-air mixtures. Formation of hazardous and caustic vapour-air mixtures possible.

5.3 Advice for firefighters

No, for listed product. Product package burns like paper or plastic. Spray any vapours released with water. Retent fire water. Use only acid-resistant safety equipment.

For great amount - if necessary - protective breathing apparatus which is independent of the ambient air (isolated equipment), and sealed protective clothing is necessary in the event of a large-scale formation of toxic substances.

5.4 Additional information

Danger for environment **only in the event of a large-scale leakage** or formation of hazardous substances.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Do not breathe vapours. Wear suitable protective gloves (see 8.2.2). Wear eye protection, respectively face protection. Regular staff training is necessary, indicating hazards and precautions on the basis of operating instructions. Restrictions on activity must be observed.

6.2 Environmental precautions

Should not be released into the environment.

PBT: not applicable

vPvB: not applicable

6.3 Methods and material for containment and cleaning up

Bind any escaping liquid with inert absorbent. And dispose in accordance to local regulations for the disposal of hazardous chemicals.

Clean any contaminated equipment and floors with plenty of water.

Collect small amounts of leaked liquid and flush with water into drains.

6.4 Reference to other sections

see information in section 5.4,7,8 and 13

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Handling in accordance with the test instruction, that comes with the product.

7.2 Conditions for safe storage, including any incompatibilities

Safe storage is guaranteed in the original packaging from MACHEREY-NAGEL. Storage class (German chemical industry): see chapter 12.1

Storage class (VCI): 3

Water hazard class (DE): 3

7.2.1 Requirements for stock rooms and containers

Keep original product packages tightly closed during handling and storage. Use inbreakable container for transport of glass bottles.

7.3 Specific end use(s)

Product for analytical use.

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SECTION 8: Exposure controls /personal protection

8.1 Control parameters

15 mL Ind. H 20 F

Chemical: *triethanolamine*

CAS No.: 102-71-6

DNEL: [derm] 6.3; [inh] 5 mg/m³

DNEL = Derived No-Effect Level (for workers)

PNEC (fresh water): 0.32 mg/L

PNEC = Predicted No Effect Concentration

TRGS 900 (DE): - DFG: 5 E mg/m³
E/e respirable

Short-term exposure factor: 1, (2)

skin resorptive (H), respiratory sensitizable (Sa), skin sensitizable (Sh), teratogenic (Z) not securely excluded / (Y) certainly excluded

SUVA(CH) MAK value: [MAK] 5 e/[STEL] 10 e mg/m³

NIOSH: not listed

[TWA] Time-weighted average to a reference period of 8 hours, [STEL] Short-term exposure limit related to a 15-minute period

OSHA: not listed

Chemical: *ethanol*

CAS No.: 64-17-5

DNEL: [derm] 343 mg/kg; [inh] 950 mg/m³

DNEL = Derived No-Effect Level (for workers)

PNEC (fresh water): 0.96 mg/L

PNEC = Predicted No Effect Concentration

TRGS 900 (DE): 200 mL/m³ / 380 mg/m³
E/e respirable

Short-term exposure factor: 4 (II), Y

skin resorptive (H), respiratory sensitizable (Sa), skin sensitizable (Sh), teratogenic (Z) not securely excluded / (Y) certainly excluded

SUVA(CH) MAK value: 500 ppm / 960 mg/m³

NIOSH: [TWA] 1000 ppm / 1900 mg/m³

[TWA] Time-weighted average to a reference period of 8 hours, [STEL] Short-term exposure limit related to a 15-minute period

OSHA: [TWA] 1000 ppm / 1900 mg/m³

Chemical: *indicator dye(s)*

CAS No.: -

2,5 g NH 4 -2

Chemical: *sodium chloride*

CAS No.: 7647-14-5

Chemical: *dichloroisocyanuric acid, Na salt*

CAS No.: 2893-78-9

NIOSH: not listed

[TWA] Time-weighted average to a reference period of 8 hours, [STEL] Short-term exposure limit related to a 15-minute period

OSHA: not listed

30 mL O 2 -2

Chemical: *sodium hydroxide solution*

CAS No.: 1310-73-2

DNEL: [inh] 1 mg/m³

DNEL = Derived No-Effect Level (for workers)

TRGS 900 (DE): 2 mg/m³
E/e respirable

Short-term exposure factor: (=1=, Y)

skin resorptive (H), respiratory sensitizable (Sa), skin sensitizable (Sh), teratogenic (Z) not securely excluded / (Y) certainly excluded

SUVA(CH) MAK value: 2 e mg/m³

NIOSH: 2 mg/m³

[TWA] Time-weighted average to a reference period of 8 hours, [STEL] Short-term exposure limit related to a 15-minute period

OSHA: [TWA] 2 mg/m³

Chemical: *potassium iodide*

CAS No.: 7681-11-0

25 mL PO 4 -2

Chemical: *sodium disulfite*

CAS No.: 7681-57-4

DNEL: [inh] 225 mg/m³

DNEL = Derived No-Effect Level (for workers)

TRGS 900 (DE): -
E/e respirable

SUVA(CH) MAK value: 5 e mg/m³

NIOSH: [TWA] 5 mg/m³

[TWA] Time-weighted average to a reference period of 8 hours, [STEL] Short-term exposure limit related to a 15-minute period

OSHA: none

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10 mL NH₄-3

Chemical: *thymol*

CAS No.: 89-83-8

Chemical: *sodium nitroprusside*

CAS No.: 13755-38-9

Chemical: *ethanol*

CAS No.: 64-17-5

DNEL: [derm] 343 mg/kg; [inh] 950 mg/m³

DNEL = Derived No-Effect Level (for workers)

PNEC (fresh water): 0.96 mg/L

PNEC = Predicted No Effect Concentration

TRGS 900 (DE): 200 mL/m³ / 380 mg/m³

E/e respirable

Short-term exposure factor: 4 (II), Y

skin resorptive (H), respiratory sensitizable (Sa), skin sensitizable (Sh), teratogenic (Z) not securely excluded / (Y) certainly excluded

SUVA(CH) MAK value: 500 ppm / 960 mg/m³

NIOSH: [TWA] 1000 ppm / 1900 mg/m³

[TWA] Time-weighted average to a reference period of 8 hours, [STEL] Short-term exposure limit related to a 15-minute period

OSHA: [TWA] 1000 ppm / 1900 mg/m³

5 g NO₂-2

Chemical: *citric acid*

CAS No.: 77-92-9

PNEC (fresh water): 440 mg/L

PNEC = Predicted No Effect Concentration

TRGS 900 (DE): 2 E mg/m³

E/e respirable

Short-term exposure factor: 2 (I) Y

skin resorptive (H), respiratory sensitizable (Sa), skin sensitizable (Sh), teratogenic (Z) not securely excluded / (Y) certainly excluded

Chemical: *N-(1-naphthyl)-ethylenediamine dihydrochloride*

CAS No.: 1465-25-4

30 mL NH₄-1

Chemical: *trisodium citrate dihydrate*

CAS No.: 6132-04-3

Chemical: *sodium hydroxide solution*

CAS No.: 1310-73-2

DNEL: [inh] 1 mg/m³

DNEL = Derived No-Effect Level (for workers)

TRGS 900 (DE): 2 mg/m³

E/e respirable

Short-term exposure factor: (=1=, Y)

skin resorptive (H), respiratory sensitizable (Sa), skin sensitizable (Sh), teratogenic (Z) not securely excluded / (Y) certainly excluded

SUVA(CH) MAK value: 2 e mg/m³

NIOSH: 2 mg/m³

[TWA] Time-weighted average to a reference period of 8 hours, [STEL] Short-term exposure limit related to a 15-minute period

OSHA: [TWA] 2 mg/m³

10 mL Ind. m

Chemical: *indicator dye(s)*

CAS No.: -

Chemical: *ethanol*

CAS No.: 64-17-5

DNEL: [derm] 343 mg/kg; [inh] 950 mg/m³

DNEL = Derived No-Effect Level (for workers)

PNEC (fresh water): 0.96 mg/L

PNEC = Predicted No Effect Concentration

TRGS 900 (DE): 200 mL/m³ / 380 mg/m³

E/e respirable

Short-term exposure factor: 4 (II), Y

skin resorptive (H), respiratory sensitizable (Sa), skin sensitizable (Sh), teratogenic (Z) not securely excluded / (Y) certainly excluded

SUVA(CH) MAK value: 500 ppm / 960 mg/m³

NIOSH: [TWA] 1000 ppm / 1900 mg/m³

[TWA] Time-weighted average to a reference period of 8 hours, [STEL] Short-term exposure limit related to a 15-minute period

OSHA: [TWA] 1000 ppm / 1900 mg/m³

Chemical: *methyl red (pH indicator)*

CAS No.: 493-52-7

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24 mL pH-1

Chemical: *indicator dye(s)*

CAS No.: -

Chemical: *ethanol*

CAS No.: 64-17-5

DNEL: [derm] 343 mg/kg; [inh] 950 mg/m³

DNEL = Derived No-Effect Level (for workers)

PNEC (fresh water): 0.96 mg/L

PNEC = Predicted No Effect Concentration

TRGS 900 (DE): 200 mL/m³ / 380 mg/m³
E/e respirable

Short-term exposure factor: 4 (II), Y

skin resorptive (H), respiratory sensitizable (Sa), skin sensitizable (Sh), teratogenic (Z) not securely excluded / (Y) certainly excluded

SUVA(CH) MAK value: 500 ppm / 960 mg/m³

NIOSH: [TWA] 1000 ppm / 1900 mg/m³

[TWA] Time-weighted average to a reference period of 8 hours, [STEL] Short-term exposure limit related to a 15-minute period

OSHA: [TWA] 1000 ppm / 1900 mg/m³

Chemical: *phenolphthalein (pH indicator)*

CAS No.: 77-09-8

NIOSH: not listed, NTP Report on Carcinogens (RoC) List Yes (Reasonably anticipated to be a human carcinogen)

[TWA] Time-weighted average to a reference period of 8 hours, [STEL] Short-term exposure limit related to a 15-minute period

OSHA: not listed

30 mL O₂-1

Chemical: *manganese chloride*

CAS No.: 7773-01-5

EU value: [TWA] 0.2E_{Mn} / 0.05A_{Mn} mg/m³

TRGS 900 (DE): 0.02 M_{Mn} A; 0.2 M_{Mn} E mg/m³
E/e respirable

Short-term exposure factor: 8 (II), Y

skin resorptive (H), respiratory sensitizable (Sa), skin sensitizable (Sh), teratogenic (Z) not securely excluded / (Y) certainly excluded

SUVA(CH) MAK value: 0,5 e mg/m³

TRGS 903 (DE): nicht mehr gelistet
B blood, U urine, a no limitation, b end of exposition or shift

NIOSH: [TWA] 1/ [STEL] 3 mg/m³

[TWA] Time-weighted average to a reference period of 8 hours, [STEL] Short-term exposure limit related to a 15-minute period

OSHA: 5 mg/m³

30 mL NO₂-1

Chemical: *sulfanilamide*

CAS No.: 63-74-1

Chemical: *o-phosphoric acid*

CAS No.: 7664-38-2

DNEL: 2.92 mg/m³

DNEL = Derived No-Effect Level (for workers)

EU value: [TWA] 1 / [STEL] 2 mg/m³

TRGS 900 (DE): [8h] 1 / [15min] 2 mg/m³
E/e respirable

Short-term exposure factor: 2 (I), Y

skin resorptive (H), respiratory sensitizable (Sa), skin sensitizable (Sh), teratogenic (Z) not securely excluded / (Y) certainly excluded

SUVA(CH) MAK value: 1 mg/m³

NIOSH: TWA 1 / ST 3 mg/m³

NIOSH STEL: 3 mg/m³

[TWA] Time-weighted average to a reference period of 8 hours, [STEL] Short-term exposure limit related to a 15-minute period

OSHA: TWA 1 mg/m³

100 mL TL AL 7

Chemical: *hydrochloric acid*

CAS No.: 7647-01-0

DNEL: [inh] 8 mg/m³

DNEL = Derived No-Effect Level (for workers)

PNEC (fresh water): 36 µg/L

PNEC = Predicted No Effect Concentration

EU value: [TWA] 5 ppm / 8 mg/m³; [STEL] 10 ppm/ 15 mg/m³

TRGS 900 (DE): 2 mL/m³ / 3 mg/m³
E/e respirable

Short-term exposure factor: 2 (I), Y

skin resorptive (H), respiratory sensitizable (Sa), skin sensitizable (Sh), teratogenic (Z) not securely excluded / (Y) certainly excluded

SUVA(CH) MAK value: 2 ppm / 3* mg/m³

NIOSH: [C] 5 ppm / 7 mg/m³

[TWA] Time-weighted average to a reference period of 8 hours, [STEL] Short-term exposure limit related to a 15-minute period



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OSHA: List of highly hazardous chemicals, toxics and reactives Yes (TQ = 5000 lbs) n/a; TWA 5 ppm / 7 mg/m³

25 mL PO 4 -1

Chemical: *sulfuric acid*

CAS No.: 7664-93-9

DNEL: 50 µg/m³
DNEL = Derived No-Effect Level (for workers)

PNEC (fresh water): 2.5 µg/L
PNEC = Predicted No Effect Concentration

TRGS 900 (DE): 0.1 E mg/m³
E/e respirable

Short-term exposure factor: 1 (I)
skin resorptive (H), respiratory sensitizable (Sa), skin sensitizable (Sh), teratogenic (Z) not securely excluded / (Y) certainly excluded

SUVA(CH) MAK value: 0,1 e mg/m³

NIOSH: NTP Report on Carcinogens (RoC) List Yes (Known to be a human carcinogen); TWA 1 mg/m³
[TWA] Time-weighted average to a reference period of 8 hours, [STEL] Short-term exposure limit related to a 15-minute period

OSHA: [TWA] 1 mg/m³

Chemical: *ammonium heptamolybdate*

CAS No.: 12054-85-2

TRGS 900 (DE): [Mo] 5 E mg/m³
E/e respirable

SUVA(CH) MAK value: [Mo] 5 e mg/m³

100 mL TL SA 10

Chemical: *sodium thiosulfate*

CAS No.: 7772-98-7

NIOSH: not listed

[TWA] Time-weighted average to a reference period of 8 hours, [STEL] Short-term exposure limit related to a 15-minute period

OSHA: not listed

100 mL TL H 20

Chemical: *ethylendinitrilo tetraacetic acid, di Na-salt (EDTA-Na)*

CAS No.: 6381-92-6

DNEL: [inh] 1.5 mg/m³
DNEL = Derived No-Effect Level (for workers)

PNEC (fresh water): 2.2 mg/L
PNEC = Predicted No Effect Concentration

30 mL O 2 -3

Chemical: *sulfuric acid*

CAS No.: 7664-93-9

DNEL: [inh] 50 µg/m³
DNEL = Derived No-Effect Level (for workers)

PNEC (fresh water): 2.5 µg/L
PNEC = Predicted No Effect Concentration

EU value: 0.1 e mg/m³
TRGS 900 (DE): 0.1 E mg/m³
E/e respirable

Short-term exposure factor: 1 (I), Y
skin resorptive (H), respiratory sensitizable (Sa), skin sensitizable (Sh), teratogenic (Z) not securely excluded / (Y) certainly excluded

SUVA(CH) MAK value: 0,1 e mg/m³

NIOSH: NTP Report on Carcinogens (RoC) List Yes (Known to be a human carcinogen); [TWA] 1 mg/m³
[TWA] Time-weighted average to a reference period of 8 hours, [STEL] Short-term exposure limit related to a 15-minute period

OSHA: [TWA] 1 mg/m³

10 mL O 2 -4

Chemical: *starch*

CAS No.: 9005-84-9

NIOSH: TWA 10 (total) / 5 (resp) mg/m³
[TWA] Time-weighted average to a reference period of 8 hours, [STEL] Short-term exposure limit related to a 15-minute period

OSHA: TWA 15 (total) / 5 (resp) mg/m³

8.2 Exposure controls

Good ventilation and extraction system in the room, floor resistant to chemicals with floor drainage and washing facilities. The highest level of cleanliness must be maintained at the workplace.

8.2.1 Respiratory protection



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No additional recommendations.

8.2.2 Skin protection / Hand protection

Yes, gloves according EN 374 (permeation time >30 min - level 2), consist of PVC, natural latex, Neopren, or Nitril (f.ex. from Ansell or KCL). Use for short times chemical resistant latex gloves with code EN 374-3 level 1.

8.2.3 Eye / Face Protection

Yes, safety glasses according EN 166 with integrated side shields or wrap-around protection or face protection.

8.2.4 Skin protection

Recommended to avoid clothing damage, and to avoid contamination with these hazards.

8.2.5 Personal hygiene

Eating, drinking, smoking, taking snuff and storage of food in work areas and at outdoor workplaces is prohibited. Avoid contact with the skin, eyes and clothing. Rinse any clothing on which the substance has been spilled, and soak it in water. Wash hands thoroughly with soap and water when stopping work and before eating, and then apply protective skin cream.

8.2.6 Thermal hazards

no data available

8.3 Limitation and monitoring of environmental exposure

Do not release product into environment.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

15 mL Ind. H 20 F

a) State of aggregation:	liquid
b) Colour:	green
c) Odor:	aminic
d) Melting point:	no data available
e) Boiling point:	no data available
f) Flammability:	no data available
g) Explosive limits (lower / upper):	no data available
h) Flash point:	29 °C
i) Flashing temperature:	no data available
j) Decomposition temperature:	no data available
k) pH value:	10-11
l) Kinematic viscosity:	no data available
m) Solubility in water:	no data available
n) Dispersion coefficient ($K_{o/w}$):	no data available
o) Vapour pressure (20°C):	no data available
p) Specific gravity:	no data available
q) Relative vapour density ($\rho_{air=1}$):	no data available
r) Particle size:	no data available

2,5 g NH₄-2

a) State of aggregation:	powder (solid)
b) Colour:	colourless
c) Odor:	chloric
d) Melting point:	no data available
e) Boiling point:	no data available
f) Flammability:	no data available
g) Explosive limits (lower / upper):	no data available
h) Flash point:	no data available
i) Flashing temperature:	no data available
j) Decomposition temperature:	no data available
k) pH value:	5-7
l) Kinematic viscosity:	no data available
m) Solubility in water:	no data available
n) Dispersion coefficient ($K_{o/w}$):	no data available
o) Vapour pressure (20°C):	no data available
p) Specific gravity:	no data available
q) Relative vapour density ($\rho_{air=1}$):	no data available
r) Particle size:	no data available

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30 mL O₂-2

a) State of aggregation:	liquid
b) Colour:	slightly yellow
c) Odor:	odorless
d) Melting point:	no data available
e) Boiling point:	no data available
f) Flammability:	no data available
g) Explosive limits (lower / upper):	no data available
h) Flash point:	no data available
i) Flashing temperature:	no data available
j) Decomposition temperature:	no data available
k) pH value:	14
l) Kinematic viscosity:	no data available
m) Solubility in water:	0-100 %
n) Dispersion coefficient (K _{o/w}):	no data available
o) Vapour pressure (20°C):	no data available
p) Specific gravity:	1,28 g/cm ³
q) Relative vapour density (air=1):	no data available
r) Particle size:	no data available

25 mL PO₄-2

a) State of aggregation:	liquid
b) Colour:	colourless
c) Odor:	sulfuric
d) Melting point:	no data available
e) Boiling point:	no data available
f) Flammability:	no data available
g) Explosive limits (lower / upper):	no data available
h) Flash point:	no data available
i) Flashing temperature:	no data available
j) Decomposition temperature:	no data available
k) pH value:	6-7
l) Kinematic viscosity:	no data available
m) Solubility in water:	no data available
n) Dispersion coefficient (K _{o/w}):	no data available
o) Vapour pressure (20°C):	no data available
p) Specific gravity:	no data available
q) Relative vapour density (air=1):	no data available
r) Particle size:	no data available

10 mL NH₄-3

a) State of aggregation:	liquid
b) Colour:	rose
c) Odor:	organic
d) Melting point:	no data available
e) Boiling point:	no data available
f) Flammability:	no data available
g) Explosive limits (lower / upper):	no data available
h) Flash point:	23 °C
i) Flashing temperature:	no data available
j) Decomposition temperature:	no data available
k) pH value:	6-8
l) Kinematic viscosity:	no data available
m) Solubility in water:	no data available
n) Dispersion coefficient (K _{o/w}):	no data available
o) Vapour pressure (20°C):	no data available
p) Specific gravity:	0,9 g/cm ³
q) Relative vapour density (air=1):	no data available
r) Particle size:	no data available

5 g NO₂-2

a) State of aggregation:	powder (solid)
b) Colour:	colourless
c) Odor:	odorless
d) Melting point:	no data available

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e) Boiling point:	no data available
f) Flammability:	no data available
g) Explosive limits (lower / upper):	no data available
h) Flash point:	no data available
i) Flashing temperature:	no data available
j) Decomposition temperature:	no data available
k) pH value:	2-3
l) Kinematic viscosity:	no data available
m) Solubility in water:	no data available
n) Dispersion coefficient ($K_{o/w}$):	no data available
o) Vapour pressure (20°C):	no data available
p) Specific gravity:	no data available
q) Relative vapour density ($\rho_{air=1}$):	no data available
r) Particle size:	no data available

30 mL NH₄-1

a) State of aggregation:	liquid
b) Colour:	colourless
c) Odor:	odorless
d) Melting point:	no data available
e) Boiling point:	no data available
f) Flammability:	no data available
g) Explosive limits (lower / upper):	no data available
h) Flash point:	no data available
i) Flashing temperature:	no data available
j) Decomposition temperature:	no data available
k) pH value:	11,5-12,5
l) Kinematic viscosity:	no data available
m) Solubility in water:	no data available
n) Dispersion coefficient ($K_{o/w}$):	no data available
o) Vapour pressure (20°C):	no data available
p) Specific gravity:	no data available
q) Relative vapour density ($\rho_{air=1}$):	no data available
r) Particle size:	no data available

10 mL Ind. m

a) State of aggregation:	liquid
b) Colour:	red
c) Odor:	alcoholic
d) Melting point:	no data available
e) Boiling point:	no data available
f) Flammability:	no data available
g) Explosive limits (lower / upper):	no data available
h) Flash point:	22,5 °C
i) Flashing temperature:	no data available
j) Decomposition temperature:	no data available
k) pH value:	6-8
l) Kinematic viscosity:	no data available
m) Solubility in water:	0-100 %
n) Dispersion coefficient ($K_{o/w}$):	no data available
o) Vapour pressure (20°C):	no data available
p) Specific gravity:	0,89 g/cm ³
q) Relative vapour density ($\rho_{air=1}$):	no data available
r) Particle size:	no data available

24 mL pH-1

a) State of aggregation:	liquid
b) Colour:	red
c) Odor:	alcoholic
d) Melting point:	-114 °C
e) Boiling point:	78 °C
f) Flammability:	no data available
g) Explosive limits (lower / upper):	3,5 ... 15 Vol%
h) Flash point:	> 12 °C

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i) Flashing temperature:	425 °C
j) Decomposition temperature:	no data available
k) pH value:	7
l) Kinematic viscosity:	no data available
m) Solubility in water:	0-100 %
n) Dispersion coefficient ($K_{o/w}$):	no data available
o) Vapour pressure (20°C):	59 hPa
p) Specific gravity:	0,79-0,86 g/cm³
q) Relative vapour density ($\rho_{air=1}$):	1,59
r) Particle size:	no data available

30 mL O₂-1

a) State of aggregation:	liquid
b) Colour:	rose
c) Odor:	odorless
d) Melting point:	no data available
e) Boiling point:	no data available
f) Flammability:	no data available
g) Explosive limits (lower / upper):	no data available
h) Flash point:	no data available
i) Flashing temperature:	no data available
j) Decomposition temperature:	no data available
k) pH value:	5-7
l) Kinematic viscosity:	no data available
m) Solubility in water:	0-100 %
n) Dispersion coefficient ($K_{o/w}$):	no data available
o) Vapour pressure (20°C):	no data available
p) Specific gravity:	no data available
q) Relative vapour density ($\rho_{air=1}$):	no data available
r) Particle size:	no data available

30 mL NO₂-1

a) State of aggregation:	liquid
b) Colour:	colourless
c) Odor:	odorless
d) Melting point:	no data available
e) Boiling point:	no data available
f) Flammability:	no data available
g) Explosive limits (lower / upper):	no data available
h) Flash point:	no data available
i) Flashing temperature:	no data available
j) Decomposition temperature:	no data available
k) pH value:	2-3
l) Kinematic viscosity:	no data available
m) Solubility in water:	no data available
n) Dispersion coefficient ($K_{o/w}$):	no data available
o) Vapour pressure (20°C):	no data available
p) Specific gravity:	1,04 g/cm³
q) Relative vapour density ($\rho_{air=1}$):	no data available
r) Particle size:	no data available

100 mL TL AL 7

a) State of aggregation:	liquid
b) Colour:	colourless
c) Odor:	odorless
d) Melting point:	no data available
e) Boiling point:	no data available
f) Flammability:	no data available
g) Explosive limits (lower / upper):	no data available
h) Flash point:	no data available
i) Flashing temperature:	no data available
j) Decomposition temperature:	no data available
k) pH value:	1-2
l) Kinematic viscosity:	no data available



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m) Solubility in water:	0-100 %
n) Dispersion coefficient ($K_{o/w}$):	no data available
o) Vapour pressure (20°C):	no data available
p) Specific gravity:	1,00 g/cm³
q) Relative vapour density ($\rho_{air=1}$):	no data available
r) Particle size:	no data available

25 mL PO₄-1

a) State of aggregation:	liquid
b) Colour:	colourless
c) Odor:	odorless
d) Melting point:	no data available
e) Boiling point:	no data available
f) Flammability:	no data available
g) Explosive limits (lower / upper):	no data available
h) Flash point:	no data available
i) Flashing temperature:	no data available
j) Decomposition temperature:	no data available
k) pH value:	1-2
l) Kinematic viscosity:	no data available
m) Solubility in water:	no data available
n) Dispersion coefficient ($K_{o/w}$):	no data available
o) Vapour pressure (20°C):	no data available
p) Specific gravity:	1,07 g/cm³
q) Relative vapour density ($\rho_{air=1}$):	no data available
r) Particle size:	no data available

100 mL TL SA 10

a) State of aggregation:	liquid
b) Colour:	colourless
c) Odor:	odorless
d) Melting point:	no data available
e) Boiling point:	no data available
f) Flammability:	no data available
g) Explosive limits (lower / upper):	no data available
h) Flash point:	no data available
i) Flashing temperature:	no data available
j) Decomposition temperature:	no data available
k) pH value:	11-11,5
l) Kinematic viscosity:	no data available
m) Solubility in water:	no data available
n) Dispersion coefficient ($K_{o/w}$):	no data available
o) Vapour pressure (20°C):	no data available
p) Specific gravity:	no data available
q) Relative vapour density ($\rho_{air=1}$):	no data available
r) Particle size:	no data available

100 mL TL H 20

a) State of aggregation:	liquid
b) Colour:	colourless
c) Odor:	aminic
d) Melting point:	no data available
e) Boiling point:	98 °C
f) Flammability:	no data available
g) Explosive limits (lower / upper):	no data available
h) Flash point:	no data available
i) Flashing temperature:	no data available
j) Decomposition temperature:	no data available
k) pH value:	9-10
l) Kinematic viscosity:	no data available
m) Solubility in water:	0-100 %
n) Dispersion coefficient ($K_{o/w}$):	no data available
o) Vapour pressure (20°C):	no data available
p) Specific gravity:	no data available

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q) Relative vapour density (air=1) : no data available
r) Particle size: no data available

30 mL O₂ -3

a) State of aggregation: liquid
b) Colour: colourless
c) Odor: odorless
d) Melting point: no data available
e) Boiling point: no data available
f) Flammability: no data available
g) Explosive limits (lower / upper): no data available
h) Flash point: no data available
i) Flashing temperature: no data available
j) Decomposition temperature: no data available
k) pH value: 0-1
l) Kinematic viscosity: no data available
m) Solubility in water: 0-100 %
n) Dispersion coefficient (K_{o/w}): no data available
o) Vapour pressure (20°C): no data available
p) Specific gravity: 1,77 g/cm³
q) Relative vapour density (air=1) : no data available
r) Particle size: no data available

10 mL O₂ -4

a) State of aggregation: liquid
b) Colour: colourless
c) Odor: odorless
d) Melting point: no data available
e) Boiling point: no data available
f) Flammability: no data available
g) Explosive limits (lower / upper): no data available
h) Flash point: no data available
i) Flashing temperature: no data available
j) Decomposition temperature: no data available
k) pH value: no data available
l) Kinematic viscosity: no data available
m) Solubility in water: no data available
n) Dispersion coefficient (K_{o/w}): no data available
o) Vapour pressure (20°C): no data available
p) Specific gravity: no data available
q) Relative vapour density (air=1) : no data available
r) Particle size: no data available

9.2 Other information

9.2.1 Information on physical hazard classes

no data available

9.2.2 Other safety-related parameters

No data is available for the other parameters for the mixtures, since no registration and no chemical safety report is required.

☐ ☐

Substances are highly volatile and form flammable gas-air mixtures. Substances are highly corrosive.

SECTION 10: Stability and reactivity

10.1 Reactivity

no further data available.



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10.2 Chemical stability

no known instability.

10.3 Possibility of hazardous reactions

Can react violently with organic material. No further data available.

10.4 Conditions to avoid

No more required.

10.5 Incompatible materials

no additional data available

10.6 Hazardous decomposition products

In the original package all parts/all reagents are safety and separated stored. Decompositions are not observed during the expiration period under recommended conditions.

SECTION 11: Toxicological information

11.1 Information on the hazard classes according regulation (EC) 1272/2008

Following information is valid for pure substances. Quantitative data on the toxicity of this product are not available.

15 mL Ind. H 20 F

Chemical: *triethanolamine* CAS No.: 102-71-6
TSCA Inventory: listed California Proposition 65 List: not listed
Australia NICNAS: not listed Canada CEPA 1999: DSL Yes
Japan CSCL/PRTR: PAC Yes, Japan PDSCL: not listed
Japan ISHL: listed $\geq 0,1\%/\geq 0,1\%$, Article 57-2 (SDS required)
South Korea TCCA: not listed
Korea Exist.Chem.Inventory: KE-25940
LD50 orl rat : > 5000 mg/kg

Chemical: *ethanol* CAS No.: 64-17-5
TSCA Inventory: listed California Proposition 65 List: not listed
ACGIH: 1000 ppm
Exposure Routes: inhalation, ingestion, skin and/or eye contact
Target Organs: Eyes, skin, respiratory system, central nervous system, liver, blood, reproductive system
Symptoms: irritation eyes, skin, nose; headache, drowsiness, lassitude (weakness, exhaustion), narcosis; cough;
liver damage; anemia; reproductive, teratogenic
Australia NICNAS: not listed Canada CEPA 1999: DSL yes
Japan CSCL/PRTR: not listed, Japan PDSCL: not listed
Japan ISHL: listed $\geq 0,1\%/\geq 0,1\%$, Article 57-2 (SDS required)
South Korea TCCA: not listed
Korea Exist.Chem.Inventory: KE-13217
LD50 orl rat : 6200 mg/kg
LC₅₀ ihl gpg : 21,900 mg/L
LC₅₀ orl hmn : 1400 mg/kg
LC50 ihl mus : 123,4 mg/L/4H
LC50 ihl rat : 115,9-133,8 mg/L/4H
LD50 orl mus : 3450 mg/kg

TRGS 905 (DE): K5, M5, R F C

Chemical: *indicator dye(s)* CAS No.: -
TSCA Inventory: all listed, <1%

2,5 g NH₄-2

Chemical: *sodium chloride* CAS No.: 7647-14-5
TSCA Inventory: listed
Korea Exist.Chem.Inventory: KE-31387
LD50 orl rat : 3000 mg/kg

Chemical: *dichloroisocyanuric acid, Na salt* CAS No.: 2893-78-9
TSCA Inventory: listed California Proposition 65 List: not listed
Australia NICNAS: not listed Canada CEPA 1999: DSL Yes
Japan CSCL/PRTR: not listed, Japan PDSCL: not listed
Japan ISHL: not listed



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South Korea TCCA: not listed
Korea Exist.Chem.Inventory: KE-10215, >25% Toxic 2014-1-688
LD50 orl rat : 550-1600 mg/kg
LC_{Low} orl hmn : 3570 mg/kg

30 mL O₂-2

Chemical: *sodium hydroxide solution* CAS No.: 1310-73-2
TSCA Inventory: listed California Proposition 65 List: not listed
Exposure Routes: inhalation, ingestion, skin and/or eye contact
Target Organs: Eyes, skin, respiratory system
Symptoms: irritation eyes, skin, mucous membrane; pneumonitis; eye, skin burns; temporary loss of hair
Australia NICNAS: not listed Canada CEPA 1999: DSL Yes
Japan CSCL/PRTR: not listed, Japan PDSCL: not listed
Japan ISHL: listed ≥1,0%/≥1,0%, Article 57-2 (SDS required)
South Korea TCCA: not listed
Korea Exist.Chem.Inventory: KE-31487
LD50 orl rat : [40%] 1250 / [<25%] >2000 mg/kg
LD50 orl mus : 40 mg/kg

Chemical: *potassium iodide* CAS No.: 7681-11-0
TSCA Inventory: listed
Korea Exist.Chem.Inventory: not listed
LD50 orl rat : 2779 mg/kg

25 mL PO₄-2

Chemical: *sodium disulfite* CAS No.: 7681-57-4
TSCA Inventory: listed California Proposition 65 List: not listed
Exposure Routes: inhalation, ingestion, skin and/or eye contact
Target Organs: Eyes, skin, respiratory system
Symptoms: irritation eyes, skin, mucous membrane
Australia NICNAS: not listed Canada CEPA 1999: DSL yes
Japan CSCL/PRTR: not listed, Japan PDSCL: not listed
Japan ISHL: listed ≥1,0%/≥1,0%, Article 57-2 (SDS required)
South Korea TCCA: not listed
Korea Exist.Chem.Inventory: KE-12701
LD50 orl rat : 1540 mg/kg

10 mL NH₄-3

Chemical: *thymol* CAS No.: 89-83-8
TSCA Inventory: listed
Korea Exist.Chem.Inventory: KE-24420
LD50 orl rat : 980 mg/kg

Chemical: *sodium nitroprusside* CAS No.: 13755-38-9
TSCA Inventory: listed (CAS 14402-89-2)
Korea Exist.Chem.Inventory: not listed
LD50 orl rat : 99 mg/kg
LC_{Low} orl rat : 20 mg/kg

Chemical: *ethanol* CAS No.: 64-17-5
TSCA Inventory: listed California Proposition 65 List: not listed
ACGIH: 1000 ppm
Exposure Routes: inhalation, ingestion, skin and/or eye contact
Target Organs: Eyes, skin, respiratory system, central nervous system, liver, blood, reproductive system
Symptoms: irritation eyes, skin, nose; headache, drowsiness, lassitude (weakness, exhaustion), narcosis; cough; liver damage; anemia; reproductive, teratogenic
Australia NICNAS: not listed Canada CEPA 1999: DSL yes
Japan CSCL/PRTR: not listed, Japan PDSCL: not listed
Japan ISHL: listed ≥0,1%/≥0,1%, Article 57-2 (SDS required)
South Korea TCCA: not listed
Korea Exist.Chem.Inventory: KE-13217



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LD50 orl rat : 6200 mg/kg
LC_{Low} ihl gpg : 21,900 mg/L
LC_{Low} orl hmn : 1400 mg/kg
LC50 ihl mus : 123,4 mg/L/4H
LC50 ihl rat : 115,9-133,8 mg/L/4H
LD50 orl mus : 3450 mg/kg

TRGS 905 (DE): K5, M5, R F C

5 g NO₂-2

Chemical: *citric acid* CAS No.: 77-92-9
TSCA Inventory: listed
Korea Exist.Chem.Inventory: KE-20831
LD50 orl rat : > 3000 mg/kg
LC50 ihl rat : 5,800 mg/L
LD50 orl mus : 5400 mg/kg
LD50 scu rat : 5500 mg/kg

Chemical: *N-(1-naphthyl)-ethylendiamine dihydrochloride* CAS No.: 1465-25-4
TSCA Inventory: listed
Korea Exist.Chem.Inventory: not listed

30 mL NH₄-1

Chemical: *trisodium citrate dihydrate* CAS No.: 6132-04-3
TSCA Inventory: listed (CAS 68-04-2)
Korea Exist.Chem.Inventory: KE-20843
LD50 orl rat : > 8000 mg/kg

Chemical: *sodium hydroxide solution* CAS No.: 1310-73-2
TSCA Inventory: listed California Proposition 65 List: not listed
Exposure Routes: inhalation, ingestion, skin and/or eye contact
Target Organs: Eyes, skin, respiratory system
Symptoms: irritation eyes, skin, mucous membrane; pneumonitis; eye, skin burns; temporary loss of hair
Australia NICNAS: not listed Canada CEPA 1999: DSL Yes
Japan CSCL/PRTR: not listed, Japan PDSCL: not listed
Japan ISHL: listed ≥1,0%/≥1,0%, Article 57-2 (SDS required)
South Korea TCCA: not listed
Korea Exist.Chem.Inventory: KE-31487
LD50 orl rat : [40%] 1250 / [<25%] >2000 mg/kg
LD50 orl mus : 40 mg/kg

10 mL Ind. m

Chemical: *indicator dye(s)* CAS No.: -
TSCA Inventory: all listed, <1%

Chemical: *ethanol* CAS No.: 64-17-5
TSCA Inventory: listed California Proposition 65 List: not listed
ACGIH: 1000 ppm
Exposure Routes: inhalation, ingestion, skin and/or eye contact
Target Organs: Eyes, skin, respiratory system, central nervous system, liver, blood, reproductive system
Symptoms: irritation eyes, skin, nose; headache, drowsiness, lassitude (weakness, exhaustion), narcosis; cough;
liver damage; anemia; reproductive, teratogenic
Australia NICNAS: not listed Canada CEPA 1999: DSL yes
Japan CSCL/PRTR: not listed, Japan PDSCL: not listed
Japan ISHL: listed ≥0,1%/≥0,1%, Article 57-2 (SDS required)
South Korea TCCA: not listed
Korea Exist.Chem.Inventory: KE-13217
LD50 orl rat : 6200 mg/kg
LC_{Low} ihl gpg : 21,900 mg/L
LC_{Low} orl hmn : 1400 mg/kg
LC50 ihl mus : 123,4 mg/L/4H
LC50 ihl rat : 115,9-133,8 mg/L/4H

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LD50 orl mus : 3450 mg/kg

TRGS 905 (DE): K5, M5, R F C

Chemical: *methyl red (pH indicator)* CAS No.: 493-52-7
 TSCA Inventory: listed
 Korea Exist.Chem.Inventory: KE-06693

24 mL pH-1

Chemical: *indicator dye(s)* CAS No.: -
 TSCA Inventory: all listed, <1%

Chemical: *ethanol* CAS No.: 64-17-5
 TSCA Inventory: listed California Proposition 65 List: not listed
 ACGIH: 1000 ppm
 Exposure Routes: inhalation, ingestion, skin and/or eye contact
 Target Organs: Eyes, skin, respiratory system, central nervous system, liver, blood, reproductive system
 Symptoms: irritation eyes, skin, nose; headache, drowsiness, lassitude (weakness, exhaustion), narcosis; cough;
 liver damage; anemia; reproductive, teratogenic
 Australia NICNAS: not listed Canada CEPA 1999: DSL yes
 Japan CSCL/PRTR: not listed, Japan PDSCl: not listed
 Japan ISHL: listed ≥0,1%/≥0,1%, Article 57-2 (SDS required)
 South Korea TCCA: not listed
 Korea Exist.Chem.Inventory: KE-13217
 LD50 orl rat : 6200 mg/kg
 LC_{Low} ihl gpg : 21,900 mg/L
 LC_{Low} orl hmn : 1400 mg/kg
 LC50 ihl mus : 123,4 mg/L/4H
 LC50 ihl rat : 115,9-133,8 mg/L/4H
 LD50 orl mus : 3450 mg/kg

TRGS 905 (DE): K5, M5, R F C

Chemical: *phenolphthalein (pH indicator)* CAS No.: 77-09-8
 TSCA Inventory: listed California Proposition 65 List: listed, cancer
 Australia NICNAS: not listed Canada CEPA 1999: DSL yes
 Japan CSCL/PRTR: PRTR - Class II Designated Chemical Substance, Japan PDSCl: not listed
 Japan ISHL: not listed
 South Korea TCCA: not listed
 Korea Exist.Chem.Inventory: KE-03234
 LD50 orl rat : > 1000 mg/kg

EU carcinogen: Carcinogenicity cat. 2, Germ Cell Mutagenicity cat. 3, >5% Reproductive Toxicity cat. 3
 TRGS 905 (DE): Karzinogenität Kat. 2

30 mL O₂-1

Chemical: *manganese chloride* CAS No.: 7773-01-5
 TSCA Inventory: listed
 Exposure Routes: inhalation, ingestion
 Target Organs: respiratory system, central nervous system, blood, kidneys
 Symptoms: Manganism; asthenia, insomnia, mental confusion; metal fume fever: dry throat, cough, chest
 tightness, dyspnea (breathing difficulty), rales, flu-like
 Japan CSCL/PRTR: PRTR: ≥1,0% Mn class I, Japan PDSCl: not listed
 Japan ISHL: listed ≥1,0%/≥0,1%
 Korea Exist.Chem.Inventory: KE-23012
 LD50 orl rat : 250 mg/kg
 Acute Effects: Cause after oral intake, impairments of health when ingested in small quantities.

30 mL NO₂-1

Chemical: *sulfanilamide* CAS No.: 63-74-1
 TSCA Inventory: listed
 Korea Exist.Chem.Inventory: KE-01188
 LD50 orl rat : 3900 mg/kg



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Chemical: *o-phosphoric acid* CAS No.: 7664-38-2
TSCA Inventory: listed California Proposition 65 List: not listed
ACGIH: 1 ppm
Exposure Routes: inhalation, ingestion, skin and/or eye contact
Target Organs: Eyes, skin, respiratory system
Symptoms: irritation eyes, skin, upper respiratory system; eye, skin, burns; dermatitis
Australia NICNAS: not listed Canada CEPA 1999: DSL Yes
Japan CSCL/PRTR: not listed, Japan PDSCL: not listed
Japan ISHL: listed $\geq 1,0\%$ / $\geq 1,0\%$, Article 57-2 (SDS required)
South Korea TCCA: not listed
Korea Exist.Chem.Inventory: KE-27427
LD50 orl rat : 1530 mg/kg
LC50 ihl rbt : 1,689 mg/L
TRGS 905 (DE): R F C

100 mL TL AL 7

Chemical: *hydrochloric acid* CAS No.: 7647-01-0
TSCA Inventory: listed California Proposition 65 List: not listed
Exposure Routes: inhalation, ingestion (solution), skin and/or eye contact
Target Organs: Eyes, skin, respiratory system
Symptoms: irritation nose, throat, larynx; cough, choking; dermatitis; solution: eye, skin burns; liquid: frostbite; in animals: laryngeal spasm; pulmonary edema
Australia NICNAS: not listed Canada CEPA 1999: DSL Yes
Japan CSCL/PRTR: not listed, Japan PDSCL: Deleterious Substance
Japan ISHL: listed $\geq 0,2\%$ / $\geq 0,1\%$, Article 57-2 (SDS required)
South Korea TCCA: Accident Precaution Chemical Yes
Korea Exist.Chem.Inventory: KE-20189, >10% Toxic 97-1-203, Acc. Precaution Chem.
LD50 orl rat : 900 mg/kg

25 mL PO 4 -1

Chemical: *sulfuric acid* CAS No.: 7664-93-9
TSCA Inventory: listed California Proposition 65 List: not listed
ACGIH: 1 ppm
Exposure Routes: inhalation, ingestion, skin and/or eye contact
Target Organs: Eyes, skin, respiratory system, teeth
Symptoms: irritation eyes, skin, nose
Australia NICNAS: not listed Canada CEPA 1999: DSL Yes
Japan CSCL/PRTR: not listed, Japan PDSCL: Deleterious Substance
Japan ISHL: listed $\geq 1,0\%$ / $\geq 1,0\%$, Article 57-2 (SDS required)
South Korea TCCA: Accident Precaution Chemical Yes
Korea Exist.Chem.Inventory: KE-32570
LD50 orl rat : 2140 mg/kg
LC50 ihl mus : 0,85 mg/L/4H
TRGS 905 (DE): R F C

Chemical: *ammonium heptamolybdate* CAS No.: 12054-85-2
TSCA Inventory: listed (CAS 11098-84-3)
Japan ISHL: listed $\geq 1,0\%$ / $\geq 0,1\%$,
Korea Exist.Chem.Inventory: not listed
LD50 orl rat : 2000-5000 mg/kg
LD50 ihl rat : 1,930-5,840 mg/L/4H

100 mL TL SA 10

Chemical: *sodium thiosulfate* CAS No.: 7772-98-7
TSCA Inventory: listed California Proposition 65 List: not listed
Australia NICNAS: not listed Canada CEPA 1999: DSL yes
Japan CSCL/PRTR: not listed, Japan PDSCL: not listed
Japan ISHL: not listed
South Korea TCCA: not listed
Korea Exist.Chem.Inventory: KE-31633
LD50 orl rat : > 5000 mg/kg

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100 mL TL H 20

Chemical: *ethylenedinitrilo tetraacetic acid, di Na-salt (EDTA-Na)* CAS No.: 6381-92-6
TSCA Inventory: listed (CAS 139-33-3)
LD50 orl rat : 2800 mg/kg

30 mL O 2 -3

Chemical: *sulfuric acid* CAS No.: 7664-93-9
TSCA Inventory: listed California Proposition 65 List: not listed
ACGIH: 1 ppm
Exposure Routes: inhalation, ingestion, skin and/or eye contact
Target Organs: Eyes, skin, respiratory system, teeth
Symptoms: irritation eyes, skin, nose, throat; pulmonary edema, bronchitis; emphysema; conjunctivitis; stomatis;
dental erosion; eye, skin burns; dermatitis
Australia NICNAS: not listed Canada CEPA 1999: DSL Yes
Japan CSCL/PRTR: not listed, Japan PDSC: Deleterious Substance
Japan ISHL: listed $\geq 1,0\%/\geq 1,0\%$, Article 57-2 (SDS required)
South Korea TCCA: Accident Precaution Chemical Yes
Korea Exist.Chem.Inventory: KE-32570, >10% Toxic 97-1-405, Acc. Precaution Chem.
LD50 orl rat : 2140 mg/kg
LC50 ihl mus : 0,85 mg/L/4H
TRGS 905 (DE): Kat 4

10 mL O 2 -4

Chemical: *starch* CAS No.: 9005-84-9
TSCA Inventory: listed
Exposure Routes: inhalation, ingestion, skin and/or eye contact
Target Organs: Eyes, skin, respiratory system
Symptoms: irritation eyes, skin, mucous membrane; cough, chest pain; dermatitis; rhinorrhea (discharge of thin nasal mucus)
Korea Exist.Chem.Inventory: KE-01773

11.2 Other hazards

Possible endocrine disrupting effects
no data available

Other information
no additional data available

SECTION 12: Ecological information

12.1 Toxicity

Following information is valid for pure substances.

15 mL Ind. H 20 F

Substance name: *triethanolamine* CAS-Nr.: 102-71-6
PNEC (fresh water) : 0.32 mg/L
PNEC = Predicted No Effect Concentration = concentration at which no effect on the environment is expected
LC50 fish/96h : >1000 mg/L
EC50 daphnia/48h : >1000^{24h} mg/L
Water hazard class (DE): 1 WGK No.: 0201
Storage class (VCI): 12

Substance name: *ethanol*

CAS-Nr.: 64-17-5

PNEC (fresh water) : 0.96 mg/L
PNEC = Predicted No Effect Concentration = concentration at which no effect on the environment is expected
LC50 daphnia magna/48h : >100 mg/L
LC50 pimephales promelas/96h : 13400 - 15100 mg/L
LC50 leuciscus idus/96h : [48h] 8140 mg/L
LC50 fish/96h : 13 g/L
EC50 daphnia/48h : 9.3-14.2 g/L
IC50 scenedesmus quadricauda/72h : [7d] 5000 mg/L
EC10 pseudomonas putida/16h : [EC5] 6500 mg/L
Water hazard class (DE): 1 WGK No.: 0096
Storage class (VCI): 3



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Substance name: *indicator dye(s)*
Storage class (VCI): 12-13

CAS-Nr.: -

2,5 g NH₄-2

Substance name: *sodium chloride*
Water hazard class (DE): 1
Storage class (VCI): 12-13

CAS-Nr.: 7647-14-5

Substance name: *dichloroisocyanuric acid, Na salt*
Water hazard class (DE): 3
Storage class (VCI): 13

CAS-Nr.: 2893-78-9

30 mL O₂-2

Substance name: *sodium hydroxide solution*
Do not release into the environment.
LC50 leuciscus idus/96h : 35-189 mg/L
LC50 fish/96h : 45.4 mg/L
EC50 daphnia/48h : >100 mg/L
Water hazard class (DE): 1 WGK No.: 142
Storage class (VCI): 8 B

CAS-Nr.: 1310-73-2

Substance name: *potassium iodide*
LC50 fish/96h : 2190 mg/L
Water hazard class (DE): 1
Storage class (VCI): 12-13

CAS-Nr.: 7681-11-0

25 mL PO₄-2

Substance name: *sodium disulfite*
LC50 fish/96h : 150-220 mg/L
EC50 daphnia/48h : 89 mg/L
IC50 scenedesmus quadricauda/72h : 48 mg/L
Water hazard class (DE): 1 WGK No.: 1169
Storage class (VCI): 8 B

CAS-Nr.: 7681-57-4

10 mL NH₄-3

Substance name: *thymol*
Harmful to aquatic life with long lasting effects. Do not release into the environment.
Environmentally hazardous substances/mixtures do not have to be labeled with P-phrases up to 125 mL (EU 1272/2008 Annex I Paragraph 1.5.2).
LC50 pimephales promelas/96h : 3.2 mg/L
EC50 daphnia/48h : 3.2 mg/L
Water hazard class (DE): 2 WGK No.: 1220
Storage class (VCI): 8 A

CAS-Nr.: 89-83-8

Substance name: *sodium nitroprusside*
Water hazard class (DE): 3
Storage class (VCI): 6.1 B

CAS-Nr.: 13755-38-9

Substance name: *ethanol*
PNEC (fresh water): 0.96 mg/L
PNEC = Predicted No Effect Concentration = concentration at which no effect on the environment is expected
LC50 daphnia magna/48h : >100 mg/L
LC50 pimephales promelas/96h : 13400 - 15100 mg/L
LC50 leuciscus idus/96h : [48h] 8140 mg/L
LC50 fish/96h : 13 g/L
EC50 daphnia/48h : 9.3-14.2 g/L
IC50 scenedesmus quadricauda/72h : [7d] 5000 mg/L
EC10 pseudomonas putida/16h : [EC5] 6500 mg/L
Water hazard class (DE): 1 WGK No.: 0096
Storage class (VCI): 3

CAS-Nr.: 64-17-5

5 g NO₂-2



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Substance name: *citric acid* CAS-Nr.: 77-92-9
 PNEC (fresh water): 440 mg/L
 PNEC = Predicted No Effect Concentration = concentration at which no effect on the environment is expected
 LC50 leuciscus idus/96h: 440-760 mg/L
 EC50 daphnia/48h: 1535 24h mg/L
 IC50 scenedesmus quadricauda/72h: 7d: 425-640 mg/L
 EC10 pseudomonas putida/16h: EC0: >10 g/L
 Water hazard class (DE): 1 WGK No.: 0057
 Storage class (VCI): 13

Substance name: *N-(1-naphthyl)-ethylendiamine dihydrochloride* CAS-Nr.: 1465-25-4
 Water hazard class (DE): 1
 Storage class (VCI): 13

30 mL NH₄-1

Substance name: *trisodium citrate dihydrate* CAS-Nr.: 6132-04-3
 LC50 fish/96h: 18-32 g/L
 EC50 daphnia/48h: 5.6-10 g/L
 EC50 chlorella vulgaris/5d: >18-32 g/L
 EC10 pseudomonas putida/16h: EC50 ps. fluorescens/8h: >1.8-3.2 g/L
 Water hazard class (DE): 1
 Storage class (VCI): 12-13

Substance name: *sodium hydroxide solution* CAS-Nr.: 1310-73-2
 Do not release into the environment.
 LC50 leuciscus idus/96h: 35-189 mg/L
 LC50 fish/96h: 45.4 mg/L
 EC50 daphnia/48h: >100 mg/L
 Water hazard class (DE): 1 WGK No.: 142
 Storage class (VCI): 8 B

10 mL Ind. m

Substance name: *indicator dye(s)* CAS-Nr.: -
 Storage class (VCI): 12-13

Substance name: *ethanol* CAS-Nr.: 64-17-5
 PNEC (fresh water): 0.96 mg/L
 PNEC = Predicted No Effect Concentration = concentration at which no effect on the environment is expected
 LC50 daphnia magna/48h: >100 mg/L
 LC50 pimephales promelas/96h: 13400 - 15100 mg/L
 LC50 leuciscus idus/96h: [48h] 8140 mg/L
 LC50 fish/96h: 13 g/L
 EC50 daphnia/48h: 9.3-14.2 g/L
 IC50 scenedesmus quadricauda/72h: [7d] 5000 mg/L
 EC10 pseudomonas putida/16h: [EC5] 6500 mg/L
 Water hazard class (DE): 1 WGK No.: 0096
 Storage class (VCI): 3

Substance name: *methyl red (pH indicator)* CAS-Nr.: 493-52-7
 Water hazard class (DE): 2
 Storage class (VCI): 12-13

24 mL pH-1

Substance name: *indicator dye(s)* CAS-Nr.: -
 Storage class (VCI): 12-13

Substance name: *ethanol* CAS-Nr.: 64-17-5
 PNEC (fresh water): 0.96 mg/L
 PNEC = Predicted No Effect Concentration = concentration at which no effect on the environment is expected
 LC50 daphnia magna/48h: >100 mg/L
 LC50 pimephales promelas/96h: 13400 - 15100 mg/L
 LC50 leuciscus idus/96h: [48h] 8140 mg/L
 LC50 fish/96h: 13 g/L
 EC50 daphnia/48h: 9.3-14.2 g/L
 IC50 scenedesmus quadricauda/72h: [7d] 5000 mg/L
 EC10 pseudomonas putida/16h: [EC5] 6500 mg/L
 Water hazard class (DE): 1 WGK No.: 0096
 Storage class (VCI): 3



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Substance name: *phenolphthalein (pH indicator)*

CAS-Nr.: 77-09-8

Water hazard class (DE): 1

Storage class (VCI): 12-13

30 mL O₂-1

Substance name: *manganese chloride*

CAS-Nr.: 7773-01-5

Toxic to aquatic life with long lasting effects. Do not release into the environment.

Environmentally hazardous substances/mixtures up to 125 mL do not have to be labeled with H and P statements (EU 1272/2008 Annex I Paragraph 1.5.2).

Water hazard class (DE): 1 WGK No.: 0494

Storage class (VCI): 12

30 mL NO₂-1

Substance name: *sulfanilamide*

CAS-Nr.: 63-74-1

Water hazard class (DE): 1 WGK No.: n.n.

Storage class (VCI): 13

Substance name: *o-phosphoric acid*

CAS-Nr.: 7664-38-2

LC50 fish/96h: 3-3.5 mg/L

Water hazard class (DE): 1 WGK No.: 0392

Storage class (VCI): 8 B

100 mL TL AL 7

Substance name: *hydrochloric acid*

CAS-Nr.: 7647-01-0

PNEC (fresh water): 36 µg/L

PNEC = Predicted No Effect Concentration = concentration at which no effect on the environment is expected

LC50 fish/96h: 24.6 mg/L

EC50 daphnia/48h: 0.492 mg/L

EC50 pseudokirchneriella subcapitata/72h: 0.78 mg/L

Water hazard class (DE): 1 WGK No.: 0238

Storage class (VCI): 8 B

25 mL PO₄-1

Substance name: *sulfuric acid*

CAS-Nr.: 7664-93-9

PNEC (fresh water): 2.5 µg/L

PNEC = Predicted No Effect Concentration = concentration at which no effect on the environment is expected

LC50 fish/96h: [NOEC, 65d] 25 µg/L

EC50 daphnia/48h: 100 mg/L

EC10 pseudomonas putida/16h: [72h] 100 mg/L

Water hazard class (DE): 1 WGK No.: 0182

Storage class (VCI): 8 B

Substance name: *ammonium heptamolybdate*

CAS-Nr.: 12054-85-2

Water hazard class (DE): 1 WGK No.: 0637

Storage class (VCI): 12-13

100 mL TL SA 10

Substance name: *sodium thiosulfate*

CAS-Nr.: 7772-98-7

Water hazard class (DE): 1

Storage class (VCI): 12-13

100 mL TL H 20

Substance name: *ethylendinitrilo tetraacetic acid, di Na-salt (EDTA-Na)*

CAS-Nr.: 6381-92-6

PNEC (fresh water): 2.2 mg/L

PNEC = Predicted No Effect Concentration = concentration at which no effect on the environment is expected

LC50 fish/96h: [4d] 41-1592 mg/L

EC50 daphnia/48h: 140 mg/L

IC50 scenedesmus quadricauda/72h: [72h] 2.77-1000 mg/L

EC10 pseudomonas putida/16h: [EC10, 30h] 500 mg/L

Water hazard class (DE): 2

Storage class (VCI): 12-13

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30 mL O₂-3

Substance name: *sulfuric acid*

CAS-Nr.: 7664-93-9

Do not release into the environment.

PNEC (fresh water): 2.5 µg/L

PNEC = Predicted No Effect Concentration = concentration at which no effect on the environment is expected

LC50 fish/96h: [NOEC, 65d] 25 µg/L

EC50 daphnia/48h: 100 mg/L

EC10 pseudomonas putida/16h: [72h] 100 mg/L

Water hazard class (DE): 1 WGK No.: 0182

Storage class (VCI): 8 B

10 mL O₂-4

Substance name: *starch*

CAS-Nr.: 9005-84-9

Water hazard class (DE): 1

12.2 Persistence and degradability

12.3 Bioaccumulative potential

15 mL Ind. H 20 F

Substance name:

triethanolamine

CAS-Nr.: 102-71-6

Dispersion coefficient (K_{ow}):

-2,3

Substance name:

ethanol

CAS-Nr.: 64-17-5

Dispersion coefficient (K_{ow}):

-0,31

Substance name:

potassium iodide

CAS-Nr.: 7681-11-0

Dispersion coefficient (K_{ow}):

0,04

Substance name:

ethanol

CAS-Nr.: 64-17-5

Dispersion coefficient (K_{ow}):

-0,31

5 g NO₂-2

Substance name:

citric acid

CAS-Nr.: 77-92-9

Dispersion coefficient (K_{ow}):

-1,72

Substance name:

ethanol

CAS-Nr.: 64-17-5

Dispersion coefficient (K_{ow}):

-0,31

Substance name:

ethanol

CAS-Nr.: 64-17-5

Dispersion coefficient (K_{ow}):

-0,31

Substance name:

phenolphthalein (pH indicator)

CAS-Nr.: 77-09-8

Dispersion coefficient (K_{ow}):

0,9

100 mL TL H 20

Substance name:

ethylendinitrilo tetraacetic acid, di Na salt (EDTA)

CAS-Nr.: 157-30-2

Dispersion coefficient (K_{ow}):

-4,3

12.4 Mobility in soil

12.5 Results of PBT and vPvB assessment

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Endocrine disrupting properties

no data available

12.7 Other adverse effects

no additional data available

SECTION 13: Disposal considerations

Please observe local regulations for collection and disposal of hazardous waste and contact waste disposal company, where you will obtain information on laboratory waste disposal (waste code number 16 05 06).

13.1 Waste treatment methods

Normally it is possible to empty small amounts (diluted!) into drains. Empty containers of corrosive reagents prior to disposal, rinse with water.

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SECTION 14: Transport information

14.1. UN number: 3316

14.2. UN proper shipping name: Chemical Kit

14.3. Class: 9

14.4. Packing group: II

Road transport ADR

Classification code: M11 Tunnel restriction code: E

Limited Quantity: acc. ADR 3.3.1/251: see LQ in Alternative declaration for transportation

Air transport IATA DGR

Limited Quantity: PAX: 960 max. quantity PAX: 10 KG
CAO: 960 max. quantity CAO: 10 KG

Maritime transport IMDG

EmS: F-A, S-P Staukategorie: A

Or use **Alternative declaration for transportation:**

UN No.: (see below) UN 1993 class 3 II, class 8 II, **Excepted Quantities** ($\leq 30 \text{ mL} / \Sigma \leq 500 \text{ mL}$) = ADR/ IATA E2

or

14.1 UN number: 1993

14.2 UN proper shipping name: Flammable liquid, n.o.s. (ethanol mixture)

14.3 Class: 3

14.4 Packing group: II

Road transport ADR

Classification code: F1 Tunnel restriction code: D/E
Limited Quantity: 1 L
Excepted Quantity: E 2
Special instructions: 274, 601, 640D

Air transport IATA DGR

Limited Quantity: PAX: 353 max. quantity PAX: 5 L
CAO: 364 max. quantity CAO: 60 L
Excepted Quantity: E 2

Maritime transport IMDG

EmS: F-E, S-E Staukategorie: B
Special instructions: 274

14.1 UN number: 3264

14.2 UN proper shipping name: Corrosive liquid, acidic, inorganic, n.o.s. (hydrochloric acid, o-phosphoric acid, sodium disulfite, sulfuric acid)

14.3 Class: 8

14.4 Packing group: II

Road transport ADR

Classification code: C1 Tunnel restriction code: E
Limited Quantity: 1 L
Excepted Quantity: E 2

Air transport IATA DGR

Limited Quantity: PAX: 851 max. quantity PAX: 1 L
CAO: 855 max. quantity CAO: 30 L
Excepted Quantity: E 2

Maritime transport IMDG

EmS: F-A, S-B Staukategorie: B
Special instructions: 274

14.1 UN number: 3266

14.2 UN proper shipping name: Corrosive liquid, basic, inorganic, n.o.s. (sodium hydroxide solution)

14.3 Class: 8

14.4 Packing group: II

Road transport ADR

Classification code: C5 Tunnel restriction code: E
Limited Quantity: 1 L
Excepted Quantity: E 2

Air transport IATA DGR

Limited Quantity: PAX: 851 max. quantity PAX: 1 L



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Excepted Quantity:	CAO: 855 E 2	max. quantity CAO: 30 L
Maritime transport IMDG		
EmS:	F-A, S-B	Staukategorie: B
Special instructions:	274	

14.5 Environmental hazards

none, contains only small quantities of hazardous substances, contains only small amounts of these substances

14.6 Special precautions for user

not necessary

14.7 Carriage in bulk by sea in accordance with IMO instruments

Not applicable.

SECTION 15: Regulatory information

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

Dangerous Substances Protection Act (DE: Chemikaliengesetz - ChemG), Aug 2013, Stand: Okt 2020
Ordinance on protection against dangerous substances (E: Gefahrstoffverordnung - GefStoffV), Nov 2010, Stand: Mrz 2017
TRGS 201, Classification and labeling of activities involving hazardous substances, Feb 2017
TRGS 220, National aspects when preparing safety data sheets, Jan 2017
TRGS 400, Risk assessment for activities involving hazardous substances, Jul 2017
TRGS 401, Skin contact hazard - identification, assessment, action, Jun 2008, status: Feb 2011
BekGS 408, Application of the GefStoffV and the TRGS with the entry into force of the CLP regulation, December 2009, status: Jan 2012
TRGS 500, Protective measures, Mai 2008
TRGS 510, Storage of hazardous substances in portable containers from March 2013, status: Oct 2015
Chapter 4, Measures when storing hazardous substances up to 50 kg (small quantity regulation)
Wasserhaushaltsgesetz - WHG, Section 3 Handling substances hazardous to water, Jul 2009, status: Aug 2016
MN leaflet/instructions for use, also at www.mn-net.com
If necessary, observe other country-specific regulations.

15.2 Chemical safety assessment

no data available

SECTION 16: Other information

16.1 Changes compared to the last version

Between versions 2.2.5.38 and 2.2.2.2 following changes were applied: - 3 composition data corrected - 36 substance data corrected

16.2 List of H and P phrases

16.2.1 List of relevant H phrases

H	Between versions 2.2.5.38 and 2.2.2.2 following changes were applied: - 3 composition data corrected - 36 substance data corrected
H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H290	May be corrosive to metals.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.
EUH031	Contact with acids liberates toxic gas.

16.2.2 List of relevant P phrases

P260sh	Do not breathe dust/vapours.
P264	Wash hands thoroughly after handling.
P280sh	Wear protective gloves/eye protection.
P303+361+353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].

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P305+351+338	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 to regulated waste treatment.

16.3 Recommended restriction on use

Only for professional user.
Look about employee restrictions for young people (f. ex. 94/33/EC or DE § 22 JArbSchG)!
Look about employee restrictions for pregnant women and nursing women (f.ex. 92/85/EEC or for DE §§ 11-13 MuSchG 2017)!
An individual package of this product or test kit has a moderate hazardous potential.

16.4 Sources of key data

KÜHN, BIRETT, Leaflets on hazardous materials, 2021
Directive 1999/92/EG Minimum requirements to improve the safety and health protection of workers at risk from potentially explosive atmospheres
SUVA .CH, limit values in the air at work 2009, revised on 01/2009
Regulation 790/2009/EU, adaptation of Regulation 1272/2008/EU to technical and scientific progress (1st ATP)
Regulation 453/2010/EU, adaptation of the REACH regulation 1907/2006/EG
Regulation 487/2013/EU, adaptation of regulation 1272/2008/EG to technical and scientific progress (4th ATP)
Regulation 1221/2015/EU, adaptation of regulation 1272/2008/EG to technical and scientific progress (7th ATP)
Regulation 776/2017/EU, adaptation of regulation 1272/2008/EG to technical and scientific progress (10th ATP)

Regulation 669/2018/EU, adaptation of Regulation 1272/2008/EC to technical and scientific progressText (11th ATP)
Regulation 1480/2018/EU, adaptation of regulation 1272/2008/EG to technical and scientific progress (13th ATP)
Regulation 521/2019/EU, adaptation of regulation 1272/2008/EG to technical and scientific progress (12th ATP)
TRGS 900, German rules of technology on limit values in the air at work, as of 03/2019
Regulation 217/2020/EU, adaptation of Annex VI, Part 3, of Regulation 1272/2008/EC to technical and scientific progress (14th ATP)
Regulation 878/2020/EU, adaptation of Annex II of the REACH regulation 1907/2006/EG
Regulation 1182/2020/EU, adaptation of Annex VI, Part 3, of Regulation 1272/2008/EC to technical and scientific progress (15th ATP)
Regulation 643/2021/EU, adaptation of Annex VI, Part 1, of Regulation 1272/2008/EC to technical and scientific progress (16th ATP)
Regulation 849/2021/EU, adaptation of Annex VI, Part 3, of Regulation 1272/2008/EC to technical and scientific progress (17th ATP)
Regulation 692/2022/EU, adaptation of Annex VI, Part 1, of Regulation 1272/2008/EC to technical and scientific progress (18th ATP)

revisions/updates

Reason for revision: 2014-02 Corrected structure of the sections according to Regulation 453/2010/EU, if necessary
2014-04 adjustment according Regulation 487/2013/EU
2016-03 adjustment according Regulation 1221/2015/EU
2017-08 adjustment according the Ordinance on Ethanol Denaturation 2016/1867/EU
2017-11 adjustment according the ECHA registration dossier
2022-11 adjustment according Regulation 878/2020/EU

16.5 Further information

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16.6 Legend / Abbreviations

acc:	according
ADR:	Convention concerning the International Carriage of Dangerous Goods by Road
Act:	acute
BAT:	biological workplace tolerance value
CAO:	Cargo Aircraft Only
Carc:	carcinogen
CAS:	Chemical Abstracts Service
CLP:	Classification, Labelling and Packaging regulation
CMR:	carcinogen, mutagen, reproduction toxic
Corr:	corrosive
COD:	chemical oxygen demand
CSCL:	Chemical Substance Control Law (Jp)
Dam:	damage
DNEL:	Derived No-Effect Level (for workers)
derm:	dermal
dog:	dog



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EC10:	Concentration causing a toxic effect in 10% of the test organisms
EC:	European Community
EC-Nr:	Substance number of the EC substance inventory
EmS:	Guide to accident management measures on ships
EU:	European Union
fish:	fish (not specified)
GHS:	Global Harmonized System of Classification and Labeling of Chemicals
gpg:	guinea pig
ICAO:	International Civil Aviation Organization
ihl:	inhaled
IMDG:	International Maritime Dangerous Goods Code
intrav:	intravenous
ipt:	intraperitoneal
ISHL:	Industrial Safety and Health Law (Jp)
LC50:	lethal concentration 50%
LD50:	lethal dose 50%
leuciscus idus:	fisch, ide, orfe
MAK:	maximum workplace concentration
Met:	Metall
mus:	mouse
Muta:	mutagen
NIOSH:	National Institute for Occupational Safety and Health (US)
NRD:	Non-rapidly degradable
onchorhynchus mykiss:	fisch, rainbow trout
orl:	oral
OSHA:	Occupational Safety and Health Administration
PAX:	transport on passenger planes allowed
PBT:	persistent, bioaccumulating, toxic substance
pH:	pH value
pimephales promelas:	fisch, fathead minnow
PNEC:	Predicted No Effect Concentration
PROC 15:	Process category 'for laboratory use'
PRTR:	Law for PRTR and Promotion of Chemical Management (Jp)
PVC:	polyvinyl chloride
quail:	bird, quail
rat:	rat
rbt:	rabbit
RD:	rapidly degradable
RE:	repeated
REACH:	Registration, Evaluation, Authorisation and Restriction of Chemicals
REF:	item number, reference number
Reg.No.:	rRegistration number
Repr:	harmful to reproduction
Resp:	respiratory
RIP:	REACH Implementations Projects
scu:	sub cutan
SDS:	safety data sheet
Sens:	sensitisation
STEL:	short term exposure limit
STOT:	Specific Target Organ Toxicity
SVHC:	Substance of Very High Concern
t/a:	tons per year
TCCA:	Toxic Chemicals Control Act (S. Korea)
Tox:	toxic
TSCA:	The Toxic Substances Control Act (US)
TWA:	time weighted average
TRGS:	technical regulations (DE)
vPvB:	very persistent, very bioaccumulating substance

16.7 Training advice

Regular safety training. Multiple safety training of staffs about danger and protection by using hazards in working area. Additionally training and introduction of staffs for using these products.