

Safety Data Sheet

according to Regulations 1907/2006/EC (REACH) and 2015/830/EU

REF: 931304

VISOCOLOR Reagent case, new

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Printing date: 15.11.2021

Date of issue: 23.06.2021

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

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 15 mL Ind. H 20 F
1 x 10 mL Ind. m
2 x 24 mL pH-1
1 x 100 mL TL AL 7
1 x 100 mL TL H 20
1 x 100 mL TL SA 10
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 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
1 x 25 mL PO₄ -1
1 x 25 mL PO₄ -2

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
Tel.: +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

You find our current versions of SDS (22 languages) in Internet:

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

SECTION 2: Hazard identification

2.0 Classification of the complete product



GHS02



GHS05



GHS07



GHS09

Signal word

DANGER

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Hazard identification	Hazard classes/categories
EUH031	031 not defined
H225	Flam. Liq. 2
H226	Flam. Liq. 3
H290	Met. Corr. 1
H302	Acute Tox. 4 oral
H314	Skin Corr. 1A
H315	Skin Irrit. 2
H318	Eye Dam. 1
H319	Eye Irrit. 2
H411	Aquatic Chronic 2
H412	Aquatic Chronic 3

2.1 Classification of the substance or mixture

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

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

100 mL TL AL 7

Signal word

Do not need labelling as hazardous
-

No hazard class

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100 mL TL H 20

Signal word

Do not need labelling as hazardous

-

No hazard class

100 mL TL SA 10

Signal word

Do not need labelling as hazardous

-

No hazard class

30 mL O₂ -1



GHS07

GHS09

Signal word

WARNING

Hazard identification

Hazard classes/categories

H302
H411

Acute Tox. 4 oral
Aquatic Chronic 2

30 mL O₂ -2



GHS05

GHS07

Signal word

DANGER

Hazard identification

Hazard classes/categories

H290
H314
H319

Met. Corr. 1
Skin Corr. 1A
Eye Irrit. 2

30 mL O₂ -3



GHS05

Signal word

DANGER

Hazard identification

Hazard classes/categories

H314

Skin Corr. 1A

10 mL O₂ -4

Signal word

Do not need labelling as hazardous

-

No hazard class

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30 mL NH₄ -1



GHS05

Signal word

DANGER

Hazard identification

Hazard classes/categories

H290

Met. Corr. 1

H314

Skin Corr. 1A

2,5 g NH₄ -2

Signal word

Do not need labelling as hazardous

-

No hazard class

10 mL NH₄ -3



GHS02



GHS05

Signal word

DANGER

Hazard identification

Hazard classes/categories

H226

Flam. Liq. 3

H314

Skin Corr. 1B

H412

Aquatic Chronic 3

30 mL NO₂ -1

Signal word

Do not need labelling as hazardous

-

Hazard identification

Hazard classes/categories

H290

Met. Corr. 1

5 g NO₂ -2

Signal word

Do not need labelling as hazardous

-

No hazard class

25 mL PO₄ -1



GHS07

Signal word

WARNING

Hazard identification

Hazard classes/categories

H315

Skin Irrit. 2

H319

Eye Irrit. 2

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25 mL PO₄ -2



GHS05

Signal word

DANGER

Hazard identification

Hazard classes/categories

EUH031
H318

031 not defined
Eye Dam. 1

2.2 Label elements

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

10 mL Ind. m



GHS02

Signal word: DANGER

24 mL pH-1



GHS02

Signal word: DANGER

100 mL TL AL 7

Do not need labelling as hazardous
Signal word: -

100 mL TL H 20

Do not need labelling as hazardous
Signal word: -

100 mL TL SA 10

Do not need labelling as hazardous

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Signal word: -

30 mL O₂ -1



GHS07



GHS09

Signal word: WARNING

30 mL O₂ -2



GHS05



GHS07

Signal word: DANGER

H314

Causes severe skin burns and eye damage.

P260sh, P280sh, P303+361+353, P305+351+338, P310

Do not breathe dust/vapours. 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.

30 mL O₂ -3



GHS05

Signal word: DANGER

H314

Causes severe skin burns and eye damage.

P260sh, P280sh, P303+361+353, P305+351+338, P310

Do not breathe dust/vapours. 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.

10 mL O₂ -4

Do not need labelling as hazardous

Signal word: -

30 mL NH₄ -1



GHS05

Signal word: DANGER

H314

Causes severe skin burns and eye damage.

P260sh, P280sh, P303+361+353, P305+351+338, P310

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Do not breathe dust/vapours. 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.

2,5 g NH₄ -2

Do not need labelling as hazardous

Signal word: -

10 mL NH₄ -3



GHS02



GHS05

Signal word: DANGER

H314, H412

Causes severe skin burns and eye damage. Harmful to aquatic life with long lasting effects.

P260sh, P280sh, P303+361+353, P305+351+338, P310

Do not breathe dust/vapours. 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.

30 mL NO₂ -1

Do not need labelling as hazardous

Signal word: -

5 g NO₂ -2

Do not need labelling as hazardous

Signal word: -

25 mL PO₄ -1



GHS07

Signal word: WARNING

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.

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. In the case of pH values are less than 5 or higher than 9 then it is irritant. Flammable properties. The property H314 "Causes severe skin burns and eye damage." of some salts is not applicable, because the mixture is buffered to pH >3-4 (see GHS Directive 1272/2008/EC Annex I, chapter 3.2.3.1.2.). 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

Harmful to aquatic life with long lasting effects. Avoid contact of substance/mixture to environment.

PBT: not applicable

vPvB: not applicable

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

Chemical: triethanolamine

CAS No.: 102-71-6

Classification: H315, Skin Irrit. 2, H319, Eye Irrit. 2, H335, STOT SE 3

Formula: C₆H₁₅NO₃

Pseudonym: 2,2',2"-nitritotriethanol; tris(2-hydroxyethyl)amine

TSCA Inventory: listed

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

RTECS: KL9275000

KE No.: KE-25940

Concentration: 20 - <45 %

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

Chemical: ethanol

CAS No.: 64-17-5

(denatured with 1%IPA/1%MEK, acc.2016/1867/EU)

Classification: H225, Flam. Liq. 2

Formula: C₂H₆O; C₂H₅OH

Pseudonym: ethyl alcohol, methylated spirit

TSCA Inventory: listed

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

EC No.: 200-578-6

Indice No.:

603-002-00-5

RTECS: KQ6300000

MFCD:

00003568

KE No.: KE-13217

Concentration: 20 - <35 %

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

Chemical: indicator dye(s)

CAS No.: -

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

TSCA Inventory: all listed, <1%

Concentration: 0.1 - <1 %

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

10 mL Ind. m

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Chemical: *methyl red (pH indicator)* CAS No.: 493-52-7
Classification: No criteria for classification or naming of chemical not required.
Formula: $C_{15}H_{15}N_3O_2$
Pseudonym: 4-(dimethylamino)-azobenzene-1,2'-carboxylic acid
TSCA Inventory: listed
EC No.: 207-776-1
RTECS: DG8960000 MFCD: 00002425
KE No.: 06693
Concentration: 0.1 - <1 %
acc. CLP (GHS): The criteria for classification are not fulfilled.

Chemical: *ethanol* CAS No.: 64-17-5
(denatured with 1%IPA/1%MEK, acc.2016/1867/EU)
Classification: H225, Flam. Liq. 2
Formula: C_2H_6O ; C_2H_5OH
Pseudonym: ethyl alcohol, methylated spirit
TSCA Inventory: listed
REACH Reg. No.: 01-2119457610-43-xxxx
EC No.: 200-578-6 Indice No.: 603-002-00-5
RTECS: KQ6300000 MFCD: 00003568
KE No.: KE-13217
Concentration: 55 - <75 %
acc. CLP (GHS): H225, Flam. Liq. 2

Chemical: *indicator dye(s)* CAS No.: -
Classification: No criteria for classification or naming of chemical not required.
TSCA Inventory: all listed, <1%
Concentration: 0.1 - <1 %
acc. CLP (GHS): The criteria for classification are not fulfilled.

24 mL pH-1

Chemical: *methyl red (pH indicator)* CAS No.: 493-52-7
Classification: No criteria for classification or naming of chemical not required.
Formula: $C_{15}H_{15}N_3O_2$
Pseudonym: 4-(dimethylamino)-azobenzene-1,2'-carboxylic acid
TSCA Inventory: listed
EC No.: 207-776-1
RTECS: DG8960000 MFCD: 00002425
KE No.: KE-06693
Concentration: < 0.10 %
acc. CLP (GHS): The criteria for classification are not fulfilled.

Chemical: *ethanol* CAS No.: 64-17-5
(denatured with 1%IPA/1%MEK, acc.2016/1867/EU)
Classification: H225, Flam. Liq. 2
Formula: C_2H_6O ; C_2H_5OH
Pseudonym: ethyl alcohol, methylated spirit
TSCA Inventory: listed
REACH Reg. No.: 01-2119457610-43-xxxx
EC No.: 200-578-6 Indice No.: 603-002-00-5
RTECS: KQ6300000 MFCD: 00003568
KE No.: KE-13217
Concentration: 90 - <98 %
acc. CLP (GHS): H225, Flam. Liq. 2

Chemical: *phenolphthalein (pH indicator)* CAS No.: 77-09-8
Classification: H341, Muta. 2, H350, Carc. 1A, H361f, Repr. 2
Formula: $C_{20}H_{14}O_4$
Pseudonym: 3,3-bis(4-hydroxyphenyl)-1(3H)-isobenzofuranone
TSCA Inventory: listed
REACH Reg. No.: 01-2119498295-24-0000
SVHC listed: YES (> 1%)
EC No.: 201-004-7 Indice No.: 604-076-00-1
RTECS: SM8380000 MFCD: 00005913
KE No.: KE-03234
Concentration: 0.01 - <0.1 %
acc. CLP (GHS): The criteria for classification are not fulfilled.

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Chemical: *indicator dye(s)* CAS No.: -
 Classification: No criteria for classification or naming of chemical not required.
 TSCA Inventory: all listed, <1%
 Concentration: 0.01 - <0.1 %
 acc. CLP (GHS): The criteria for classification are not fulfilled.

100 mL TL AL 7

Chemical: *hydrochloric acid* CAS No.: 7647-01-0
 Classification: H290, Met. Corr. 1, H314, Skin Corr. 1B, H331, Acute Tox. 3 inh.
 Formula: $\text{HCl} \cdot \text{H}_2\text{O}$
 Pseudonym: aqueous hydrogen chloride
 TSCA Inventory: listed
 REACH Reg. No.: 01-2119484862-27-xxxx
 EC No.: 231-595-7 Indice No.: 017-002-01-X
 RTECS: MW4025000
 KE No.: KE-20189, >10% Toxic 97-1-203, Acc. Precaution Chem.
 Concentration: 0.1 - <1 %
 acc. CLP (GHS): The criteria for classification are not fulfilled.

100 mL TL H 20

Chemical: *ethylenedinitrilo tetraacetic acid, di Na-salt (EDTA-Na)* CAS No.: 6381-92-6
 Classification: H332, Acute Tox. 4 inh., H373, STOT RE 2
 Formula: $\text{C}_{10}\text{H}_{14}\text{N}_2\text{Na}_2\text{O}_8 \cdot 2\text{H}_2\text{O}$
 TSCA Inventory: listed (CAS 139-33-3)
 EC No.: 205-358-3
 RTECS: AH4410000; AH4375000 MFCD: 00150037
 Concentration: 0.1 - <1 %
 acc. CLP (GHS): The criteria for classification are not fulfilled.

100 mL TL SA 10

Chemical: *sodium thiosulfate* CAS No.: 7772-98-7
 Classification: No criteria for classification or naming of chemical not required.
 Formula: $\text{Na}_2\text{O}_3\text{S}_2$
 Pseudonym: thiosulfuric acid, disodium salt
 TSCA Inventory: listed
 REACH Reg. No.: 01-2119531537-38-xxxx
 EC No.: 231-867-5
 KE No.: KE-31633
 Concentration: 0.1 - <1 %
 acc. CLP (GHS): The criteria for classification are not fulfilled.

30 mL O₂-1

Chemical: *manganese chloride* CAS No.: 7773-01-5
 Classification: H301, Acute Tox. 3 oral, H411, Aquatic Chronic 2
 Formula: MnCl_2
 Pseudonym: manganese dichloride
 TSCA Inventory: listed
 REACH Reg. No.: 01-2119934899-15-xxxx
 EC No.: 231-869-6
 RTECS: OO9625000
 KE No.: KE-23012
 Concentration: 25 - <50 % Correlation factor: x 0.44 (= %Mn)
 The classification refers to weight percent of the metal (according to CLP Regulation 2008/1272/EC Annex VI, 1.1.3.2 Note 1)
 acc. CLP (GHS): H302, Acute Tox. 4 oral, H411, Aquatic Chronic 2

30 mL O₂-2

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Chemical: *sodium hydroxide solution* CAS No.: 1310-73-2
Classification: H290, Met. Corr. 1, H314, Skin Corr. 1B
Formula: $\text{NaOH} \cdot \text{H}_2\text{O}$
Pseudonym: soda lye
TSCA Inventory: listed
REACH Reg. No.: 01-2119457892-27-xxxx
EC No.: 215-185-5 Indice No.: 011-002-00-6
RTECS: WB4900000
KE No.: KE-31487
Concentration: 20 - <35 %
acc. CLP (GHS): H290, Met. Corr. 1, H314, Skin Corr. 1B

Chemical: *potassium iodide* CAS No.: 7681-11-0
Classification: H319, Eye Irrit. 2
Formula: KI
TSCA Inventory: listed
REACH Reg. No.: YES, confidential
EC No.: 231-659-4
RTECS: TT29750000 MFCD: 00011405
KE No.: not listed
Concentration: 10 - <20 %
acc. CLP (GHS): H319, Eye Irrit. 2

30 mL O₂ -3

Chemical: *sulfuric acid* CAS No.: 7664-93-9
Classification: H314, Skin Corr. 1B
Formula: $\text{H}_2\text{SO}_4 (\cdot \text{H}_2\text{O})$
TSCA Inventory: listed
REACH Reg. No.: 01-2119458838-20-xxxx
EC No.: 231-639-5 Indice No.: 016-020-00-8
RTECS: WS5600000
KE No.: KE-32570, >10% Toxic 97-1-405, Acc. Precaution Chem.
Concentration: 51 - <65 %
acc. CLP (GHS): H314, Skin Corr. 1B

10 mL O₂ -4

Chemical: *starch* CAS No.: 9005-84-9
Classification: No criteria for classification or naming of chemical not required.
Formula: $(\text{C}_6\text{H}_{10}\text{O}_5)_n$
Pseudonym: Amylodextrin
TSCA Inventory: listed
REACH Reg. No.: exempt, Annex IV
EC No.: 232-686-4, 232-679-6
RTECS: GM5090000
KE No.: KE-01773
Concentration: < 0.10 %
acc. CLP (GHS): The criteria for classification are not fulfilled.

30 mL NH₄ -1

Chemical: *sodium hydroxide solution* CAS No.: 1310-73-2
Classification: H290, Met. Corr. 1, H314, Skin Corr. 1B
Formula: $\text{NaOH} \cdot \text{H}_2\text{O}$
Pseudonym: soda lye
TSCA Inventory: listed
REACH Reg. No.: 01-2119457892-27-xxxx
EC No.: 215-185-5 Indice No.: 011-002-00-6
RTECS: WB4900000
KE No.: KE-31487
Concentration: 5 - <10 %
acc. CLP (GHS): H290, Met. Corr. 1, H314, Skin Corr. 1B

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Chemical: *tri-sodium citrate*

CAS No.: 6132-04-3

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

Formula: $C_6H_5Na_3O_7 \cdot 2H_2O$

TSCA Inventory: listed (CAS 68-04-2)

REACH Reg. No.: 01-2119457027-40-xxxx

EC No.: 200-675-3

RTECS: GE8300000

KE No.: KE-20843

Concentration: 10 - <20 %

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

2,5 g NH_4 -2

Chemical: *dichloroisocyanuric acid, Na salt*

CAS No.: 2893-78-9

Classification: H272, Ox. Liq. 2, H302, Acute Tox. 4 oral, H319, Eye Irrit. 2, H335, STOT SE 3, H410, Aquatic

Chronic 1, EUH031, 031 not defined

Formula: $C_3Cl_2N_3NaO_3$

Pseudonym: troclosene sodium, sodium 3,5-dichloro-2,4,6-trioxo-1,3,5-triazinan-1-ide

TSCA Inventory: listed

REACH Reg. No.: 01-2119489371-33-xxxx

EC No.: 220-767-7

Indice No.: 613-030-01-7

RTECS: XZ1900000

MFCD: 00006036

KE No.: KE-10215, >25% Toxic 2014-1-688

Concentration: 3 - <10 %

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

Chemical: *sodium chloride*

CAS No.: 7647-14-5

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

Formula: NaCl

Pseudonym: salt

TSCA Inventory: listed

REACH Reg. No.: exempt, Annex V

EC No.: 231-598-3

RTECS: VZ4725000

KE No.: KE-31387

Concentration: 80 - <100 %

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

10 mL NH_4 -3

Chemical: *sodium nitroprusside*

CAS No.: 13755-38-9

Classification: H301, Acute Tox. 3 oral

Formula: $Na_2[Fe(CN)_5NO] \cdot 2H_2O$

Pseudonym: disodium pentacyanonitrosylferrate

TSCA Inventory: listed (CAS 14402-89-2)

EC No.: 238-373-9

RTECS: LJ89250000

KE No.: not listed

Concentration: 1 - <5 %

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

Chemical: *ethanol*

CAS No.: 64-17-5

(denatured with 1%IPA/1%MEK, acc.2016/1867/EU)

Classification: H225, Flam. Liq. 2

Formula: C_2H_6O ; C_2H_5OH

Pseudonym: ethyl alcohol, methylated spirit

TSCA Inventory: listed

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

EC No.: 200-578-6

Indice No.: 603-002-00-5

RTECS: KQ6300000

MFCD: 00003568

KE No.: KE-13217

Concentration: 35 - <55 %

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

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Chemical: *thymol* CAS No.: 89-83-8
Classification: H302, Acute Tox. 4 oral, H314, Skin Corr. 1B, H411, Aquatic Chronic 2
Formula: $C_{10}H_{14}O$
Pseudonym: 5-methyl-2-(1-methylethyl)-phenol
TSCA Inventory: listed
REACH Reg. No.: 01-2119511177-46-xxxx
EC No.: 201-944-8 Indice No.: 604-032-00-1
RTECS: XP2275000 MFCD: 00002309
KE No.: KE-24420
Concentration: 5 - <10 %
acc. CLP (GHS): H314, Skin Corr. 1B, H412, Aquatic Chronic 3

30 mL NO₂ -1

Chemical: *sulfanilamide* CAS No.: 63-74-1
Classification: H303, Acute Tox. 5 oral
Formula: $C_6H_8N_2O_2S$
Pseudonym: 4-aminobenzene sulfonamide
TSCA Inventory: listed
EC No.: 200-563-4
RTECS: WO8400000 MFCD: 00007939
KE No.: KE-01188
Concentration: 1 - <10 %
acc. CLP (GHS): The criteria for classification are not fulfilled.

Chemical: *o-phosphoric acid* CAS No.: 7664-38-2
Classification: H290, Met. Corr. 1, H302, Acute Tox. 4 oral, H314, Skin Corr. 1B
Formula: $H_3PO_4 \cdot H_2O$
Pseudonym: orthophosphoric acid
TSCA Inventory: listed
REACH Reg. No.: 01-2119485924-24-xxxx
EC No.: 231-633-2 Indice No.: 015-011-00-6
RTECS: TB6300000
KE No.: KE-27427
Concentration: 1 - <10 %
acc. CLP (GHS): H290, Met. Corr. 1

5 g NO₂ -2

Chemical: *N-(1-naphthyl)-ethylenediamine dihydrochloride* CAS No.: 1465-25-4
Classification: H315, Skin Irrit. 2, H319, Eye Irrit. 2
Formula: $C_{12}H_{16}Cl_2N_2$
Pseudonym: N1-1-naphthalenyl-1,2-ethanediamine, dihydrochloride
TSCA Inventory: listed
EC No.: 215-981-2
RTECS: KV5330000 MFCD: 00012556
KE No.: not listed
Concentration: 1 - <10 %
acc. CLP (GHS): The criteria for classification are not fulfilled.

Chemical: *citric acid* CAS No.: 77-92-9
Classification: H303, Acute Tox. 5 oral, H316, Skin Irrit. 3, H319, Eye Irrit. 2, H335, STOT SE 3
Formula: $C_6H_8O_7$
Pseudonym: 2-hydroxy-1,2,3-propanetricarboxylic acid
TSCA Inventory: listed
REACH Reg. No.: 01-2119457026-42-xxxx
EC No.: 201-069-1
RTECS: GE7350000/GE7810000
KE No.: KE-20831
Concentration: 1 - <10 %
acc. CLP (GHS): The criteria for classification are not fulfilled.

25 mL PO₄ -1

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Chemical: *ammonium heptamolybdate* CAS No.: 12054-85-2
Classification: No criteria for classification or naming of chemical not required.
Formula: $H_{24}Mo_7N_6O_{24}$
Pseudonym: hexaammonium heptamolybdate
TSCA Inventory: listed (CAS 11098-84-3)
REACH Reg. No.: 01-2119498057-28-xxxx
EC No.: 234-722-4
RTECS: QA5076000 / QA4900000 MFCD: 00167059
KE No.: not listed
Concentration: 0.5 - <2 % Correlation factor: x 0.58 (= %Mo)
The classification refers to weight percent of the metal (according to CLP Regulation 2008/1272/EC Annex VI, 1.1.3.2 Note 1)
acc. CLP (GHS): The criteria for classification are not fulfilled.

Chemical: *sulfuric acid (diluted < 5 %)* CAS No.: 7664-93-9d
Classification: H315, Skin Irrit. 2, H319, Eye Irrit. 2
Formula: $H_2SO_4 \cdot H_2O$
TSCA Inventory: listed
REACH Reg. No.: 01-2119458838-20-xxxx
EC No.: 231-639-5 Indice No.: 016-020-00-8
RTECS: WS5600000
KE No.: KE-32570
Concentration: 5 - <15 %
acc. CLP (GHS): H315, Skin Irrit. 2, H319, Eye Irrit. 2

25 mL PO₄ -2

Chemical: *sodium disulfite* CAS No.: 7681-57-4
Classification: H302, Acute Tox. 4 oral, H318, Eye Dam. 1, EUH031, 031 not defined
Formula: $Na_2O_5S_2$
Pseudonym: sodium metabisulphite, sodium pyrosulfite
TSCA Inventory: listed
REACH Reg. No.: 01-2119531326-45-xxxx
EC No.: 231-673-0 Indice No.: 016-063-00-2
RTECS: UX8225000
KE No.: KE-12701
Concentration: 10 - <25 %
acc. CLP (GHS): H318, Eye Dam. 1, EUH031, 031 not defined

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 16.1

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. ---

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4.2 Most important symptoms and effects, both acute and delayed

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 glucocorticosteroids 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 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 DISTRESSES ensure that the patient inhales oxygen. ---

SECTION 5: Firefighting measures

5.1 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.

5.2 Special hazards arising from the substance or mixture

WARNING: Flammable (GHS regulation). May form explosive vapour-air mixtures. **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

not necessary, contains only small amounts of these substances

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 ---

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

The original product package of MACHEREY-NAGEL allows a safe storage.

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: I, (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.: -

10 mL Ind. m

Chemical: *methyl red (pH indicator)*

CAS No.: 493-52-7

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.: -

24 mL pH-1

Chemical: *methyl red (pH indicator)*

CAS No.: 493-52-7

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

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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

Chemical: *indicator dye(s)*

CAS No.: -

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

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

100 mL TL H 20

Chemical: *ethylenedinitrilo 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

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

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): 0.02Mn A; 0.2Mn 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 O₂ -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

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Chemical: *potassium iodide*

CAS No.: 7681-11-0

30 mL O₂ -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 O₂ -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

30 mL NH₄ -1

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: *tri-sodium citrate*

CAS No.: 6132-04-3

2,5 g NH₄ -2

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

Chemical: *sodium chloride*

CAS No.: 7647-14-5

10 mL NH₄ -3

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

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Chemical: *thymol*

CAS No.: 89-83-8

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

5 g NO₂ -2

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

CAS No.: 1465-25-4

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

25 mL PO₄ -1

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

Chemical: *sulfuric acid*

CAS No.: 7664-93-9d

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

25 mL PO₄ -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

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.

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- 8.2.1 Respiratory protection**
No additional recommendations.
- 8.2.2 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 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.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

15 mL Ind. H 20 F

Appearance: liquid
pH:
Flash point:

Colour: green
10-11
29 °C

Odor: aminic

10 mL Ind. m

Appearance: liquid
pH:
Flash point:
Specific gravity:
Solubility in water:

Colour: red
6-8
22,5 °C
0,89 g/cm³
0-100 %

Odor: alcoholic

24 mL pH-1

Appearance: liquid
Odor limit:
pH:
Melting point:
Boiling point:
Flash point:
Explosion limits:
Vapour pressure (20°C):
Vapour density (air=1):
Specific gravity:
Solubility in water:
Flashing temperature:
Volatiles by volume:

Colour: red
19...93 mg/m³
7
-114 °C
78 °C
> 12 °C
3.5 ...15 Vol%
59 hPa
1,59
0,79-0,86 g/cm³
0-100 %
425 °C
112 g/m³

Odor: alcoholic

100 mL TL AL 7

Appearance: liquid
pH:
Specific gravity:
Solubility in water:

Colour: colourless
1-2
1,00 g/cm³
0-100 %

Odor: odorless

100 mL TL H 20

Appearance: liquid
pH:
Solubility in water:

Colour: colourless
9-10
0-100 %

Odor: aminic

100 mL TL SA 10

Appearance: liquid
pH:

Colour: colourless
11-11,5

Odor: odorless

30 mL O₂ -1

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Appearance: liquid	Colour: rose	Odor: odorless
pH:	5-7	
Solubility in water:	0-100 %	

30 mL O₂ -2

Appearance: liquid	Colour: slightly yellow	Odor: odorless
pH:	14	
Specific gravity:	1,28 g/cm ³	
Solubility in water:	0-100 %	

30 mL O₂ -3

Appearance: liquid	Colour: colourless	Odor: odorless
pH:	0-1	
Specific gravity:	1,77 g/cm ³	
Solubility in water:	0-100 %	

10 mL O₂ -4

Appearance: liquid	Colour: colourless	Odor: odorless
--------------------	--------------------	----------------

30 mL NH₄ -1

Appearance: liquid	Colour: colourless	Odor: odorless
pH:	11,5-12,5	

2,5 g NH₄ -2

Appearance: powder (solid)	Colour: colourless	Odor: chloric
pH:	5-7	

10 mL NH₄ -3

Appearance: liquid	Colour: rose	Odor: organic
pH:	6-8	
Flash point:	23 °C	
Specific gravity:	0,9 g/cm ³	

30 mL NO₂ -1

Appearance: liquid	Colour: colourless	Odor: odorless
pH:	2-3	
Specific gravity:	1,04 g/cm ³	

5 g NO₂ -2

Appearance: powder (solid)	Colour: colourless	Odor: odorless
pH:	2-3	

25 mL PO₄ -1

Appearance: liquid	Colour: colourless	Odor: odorless
pH:	1-2	
Specific gravity:	1,07 g/cm ³	

25 mL PO₄ -2

Appearance: liquid	Colour: colourless	Odor: sulfuric
pH:	6-7	

9.2 Other information

Data for the other parameters of the mixtures are not available, because no registration and no chemical safety report is required.

Relevant Properties of Substance Group

Substances are very volatile and form flammable vapour-air mixtures. ---

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SECTION 10: Stability and reactivity

10.1 Reactivity

no further data available.

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

Not necessary. ---

10.5 Incompatible materials

Avoid contact with strong acids or alkalines.

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 toxicological effects

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:	<i>triethanolamine</i>	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	
LD50 _{drm rbt} :	> 2000 mg/kg	

Chemical:	<i>ethanol</i>	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	
LC _{Lowihl} gpg:	21.9 g/m ³	
LC _{Loworl} hmn:	1400 mg/kg	
LC50 _{ihl mouse} :	[4h] 39 g/m ³	
LC50 _{ihl rat} :	[10h] 20 g/m ³	
LD50 _{drm rbt} :	20 000 mg/kg	
LD50 _{oral mouse} :	3450 mg/kg	

TRGS 905 (DE): K5, M5, R_F C

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

10 mL Ind. m

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Chemical: *methyl red (pH indicator)*
TSCA Inventory: listed
Korea Exist.Chem.Inventory: KE-06693
LD50_{orl rat}: Keine Daten verfügbar
LC50_{ihl rat}: Keine Daten verfügbar
LD50_{drm rat}: Keine Daten verfügbar

CAS No.: 493-52-7

Chemical: *ethanol*
TSCA Inventory: 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
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_{Lowihl gpg}: 21.9 g/m³
LC_{Loworl hmn}: 1400 mg/kg
LC50_{ihl mouse}: [4h] 39 g/m³
LC50_{ihl rat}: [10h] 20 g/m³
LD50_{drm rbt}: 20 000 mg/kg
LD50_{oral mouse}: 3450 mg/kg
TRGS 905 (DE): K5, M5, R_F C

CAS No.: 64-17-5

California Proposition 65 List: not listed

Canada CEPA 1999: DSL yes

Chemical: *indicator dye(s)*
TSCA Inventory: all listed, <1%

CAS No.: -

24 mL pH-1

Chemical: *methyl red (pH indicator)*
TSCA Inventory: listed
Korea Exist.Chem.Inventory: KE-06693
LD50_{orl rat}: Keine Daten verfügbar
LC50_{ihl rat}: Keine Daten verfügbar
LD50_{drm rat}: Keine Daten verfügbar

CAS No.: 493-52-7

Chemical: *ethanol*
TSCA Inventory: 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
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_{Lowihl gpg}: 21.9 g/m³
LC_{Loworl hmn}: 1400 mg/kg
LC50_{ihl mouse}: [4h] 39 g/m³
LC50_{ihl rat}: [10h] 20 g/m³
LD50_{drm rbt}: 20 000 mg/kg
LD50_{oral mouse}: 3450 mg/kg
TRGS 905 (DE): K5, M5, R_F C

CAS No.: 64-17-5

California Proposition 65 List: not listed

Canada CEPA 1999: DSL yes

Chemical: *phenolphthalein (pH indicator)*
TSCA Inventory: listed
Australia NICNAS: not listed
Japan CSCL/PRTR: PRTR - Class II Designated Chemical Substance, Japan PDSCL: not listed

CAS No.: 77-09-8

California Proposition 65 List: listed, cancer

Canada CEPA 1999: DSL yes

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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

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

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 PDSC: Deleterious Substance
Japan ISHL: listed ≥0,2%/≥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
LC50_{drn rbt}: >5010 mg/kg

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

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 PDSC: not listed
Japan ISHL: not listed
South Korea TCCA: not listed
Korea Exist.Chem.Inventory: KE-31633

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 PDSC: 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 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

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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-31487
LD50_{orl rat}: [40%] 1250 / [<25%] >2000 mg/kg
LD50_{drm rbt}: not applicable
LD50_{orl mus}: 40 mg/kg

Chemical: *potassium iodide*
TSCA Inventory: listed
Korea Exist.Chem.Inventory: not listed
LD50_{orl rat}: 2779 mg/kg

CAS No.: 7681-11-0

30 mL O₂ -3

Chemical: *sulfuric acid*
TSCA Inventory: 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
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, >10% Toxic 97-1-405, Acc. Precaution Chem.
LD50_{orl rat}: 2140 mg/kg
LC50_{ihl rat}: [8h] 600/ [4h] 850 mg/m³
TRGS 905 (DE): Kat 4

CAS No.: 7664-93-9

California Proposition 65 List: not listed

10 mL O₂ -4

Chemical: *starch*
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

CAS No.: 9005-84-9

30 mL NH₄ -1

Chemical: *sodium hydroxide solution*
TSCA Inventory: 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
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-31487
LD50_{orl rat}: [40%] 1250 / [<25%] >2000 mg/kg
LD50_{drm rbt}: not applicable
LD50_{orl mus}: 40 mg/kg

CAS No.: 1310-73-2

California Proposition 65 List: not listed

Chemical: *tri-sodium citrate*
TSCA Inventory: listed (CAS 68-04-2)
Korea Exist.Chem.Inventory: KE-20843
LD50_{orl rat}: >8000 mg/kg

CAS No.: 6132-04-3

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2,5 g NH₄ -2

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
South Korea TCCA: not listed
Korea Exist.Chem.Inventory: KE-10215, >25% Toxic 2014-1-688
LD50_{orl rat}: 550-1600 mg/kg
LC_{LoWorl hmn}: 3570 mg/kg
LD50_{drm rbt}: >5000 mg/kg

Chemical: *sodium chloride* CAS No.: 7647-14-5
TSCA Inventory: listed
Korea Exist.Chem.Inventory: KE-31387
LD50_{orl rat}: 3000 mg/kg
LD50_{drm rbt}: 10 g/kg

10 mL NH₄ -3

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_{LoWorl 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
LD50_{orl rat}: 6200 mg/kg
LC_{LoWihl gpg}: 21.9 g/m³
LC_{LoWorl hmn}: 1400 mg/kg
LC50_{ihl mouse}: [4h] 39 g/m³
LC50_{ihl rat}: [10h] 20 g/m³
LD50_{drm rbt}: 20 000 mg/kg
LD50_{oral mouse}: 3450 mg/kg
TRGS 905 (DE): K5, M5, R_F C

Chemical: *thymol* CAS No.: 89-83-8
TSCA Inventory: listed
Korea Exist.Chem.Inventory: KE-24420
LD50_{orl rat}: 980 mg/kg
LD50_{drm rat}: > 2000 mg/kg

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

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

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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
LD50_{drm rbt}: 2750 mg/kg

TRGS 905 (DE): R_F C

5 g NO₂-2

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

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}: 5800 mg/m³
LD50_{drm rat}: >2000 mg/kg
LD50_{orl mus}: 5400 mg/kg
LD50_{scu rat}: 5500 mg/kg

25 mL PO₄-1

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

Chemical: *sulfuric acid* CAS No.: 7664-93-9d
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 rat}: [8h] 600/ [4h] 850 mg/m³

TRGS 905 (DE): R_F C

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 $\geq 1,0\%$ / $\geq 1,0\%$, Article 57-2 (SDS required)
South Korea TCCA: not listed
Korea Exist.Chem.Inventory: KE-12701
LD50_{orl rat}: 1540 mg/kg
LD50_{drm rat}: 2000 mg/kg

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SECTION 12: Ecological information

12.1 Toxicity

Following information is valid for pure substances.

15 mL Ind. H 20 F

Chemical: triethanolamine

CAS No.: 102-71-6

PNEC(fresh water): 0.32 mg/L

PNEC = Predicted No Effect Concentration

LC50fish/96h: >1000 mg/L

EC50daphnia/48h: >1000_{24h} mg/L

Water hazard class (DE): 1 WGK No.: 0201

Dispersion coefficient(octanol-water): -2.3

Storage class (VCI): 12

Chemical: ethanol

CAS No.: 64-17-5

PNEC(fresh water): 0.96 mg/L

PNEC = Predicted No Effect Concentration

LC50daphnia magna/48h: >100 mg/L

LC50pimephales promelas/96h: 13400 - 15100 mg/L

LC50leuciscus idus/96h: [48h] 8140 mg/L

LC50fish/96h: 13 g/L

EC50daphnia/48h: 9.3-14.2 g/L

IC50scenedesmus quadricauda/72h: [7d] 5000 mg/L

EC10pseudomonas putida/16h: [EC5] 6500 mg/L

Water hazard class (DE): 1 WGK No.: 0096

Dispersion coefficient(octanol-water): -0.31

Storage class (VCI): 3

Chemical: indicator dye(s)

CAS No.: -

Storage class (VCI): 12-13

10 mL Ind. m

Chemical: methyl red (pH indicator)

CAS No.: 493-52-7

Water hazard class (DE): 2

Storage class (VCI): 12-13

Chemical: ethanol

CAS No.: 64-17-5

PNEC(fresh water): 0.96 mg/L

PNEC = Predicted No Effect Concentration

LC50daphnia magna/48h: >100 mg/L

LC50pimephales promelas/96h: 13400 - 15100 mg/L

LC50leuciscus idus/96h: [48h] 8140 mg/L

LC50fish/96h: 13 g/L

EC50daphnia/48h: 9.3-14.2 g/L

IC50scenedesmus quadricauda/72h: [7d] 5000 mg/L

EC10pseudomonas putida/16h: [EC5] 6500 mg/L

Water hazard class (DE): 1 WGK No.: 0096

Dispersion coefficient(octanol-water): -0.31

Storage class (VCI): 3

Chemical: indicator dye(s)

CAS No.: -

Storage class (VCI): 12-13

24 mL pH-1

Chemical: methyl red (pH indicator)

CAS No.: 493-52-7

Water hazard class (DE): 2

Storage class (VCI): 12-13

Chemical: ethanol

CAS No.: 64-17-5

PNEC(fresh water): 0.96 mg/L

PNEC = Predicted No Effect Concentration

LC50daphnia magna/48h: >100 mg/L

LC50pimephales promelas/96h: 13400 - 15100 mg/L

LC50leuciscus idus/96h: [48h] 8140 mg/L

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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
 Dispersion coefficient_(octanol-water) : -0.31
 Storage class (VCI): 3

Chemical: *phenolphthalein (pH indicator)*
 Water hazard class (DE): 1
 Dispersion coefficient_(octanol-water) : 0.9
 Storage class (VCI): 12-13

CAS No.: 77-09-8

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

CAS No.: -

100 mL TL AL 7

Chemical: *hydrochloric acid*
 PNEC_(fresh water) : 36 µg/L
 PNEC = Predicted No Effect Concentration
 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

CAS No.: 7647-01-0

100 mL TL H 20

Chemical: *ethylenedinitrilo tetraacetic acid, di Na-salt (EDTA-Na)*
 PNEC_(fresh water) : 2.2 mg/L
 PNEC = Predicted No Effect Concentration
 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
 Dispersion coefficient_(octanol-water) : -4.3
 Storage class (VCI): 12-13

CAS No.: 6381-92-6

100 mL TL SA 10

Chemical: *sodium thiosulfate*
 Water hazard class (DE): 1
 Storage class (VCI): 12-13

CAS No.: 7772-98-7

30 mL O₂ -1

Chemical: *manganese chloride*
 Toxic to aquatic life with long lasting effects. Avoid contact of substance/mixture to environment.
 Environmental hazards must not be labelled with H and P phrases until 125 mL (EU 1272/2008 Annex I - 1.5.2).
 Water hazard class (DE): 1 WGK No.: 0494
 Storage class (VCI): 12

CAS No.: 7773-01-5

30 mL O₂ -2

Chemical: *sodium hydroxide solution*
 Avoid contact of substance/mixture to 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 No.: 1310-73-2

Chemical: *potassium iodide*
 LC50_{fish/96h} : 2190 mg/L
 Water hazard class (DE): 1
 Dispersion coefficient_(octanol-water) : 0.04
 Storage class (VCI): 12-13

CAS No.: 7681-11-0

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30 mL O₂ -3

Chemical: *sulfuric acid*

CAS No.: 7664-93-9

Avoid contact of substance/mixture to environment.

PNEC(fresh water) : 2.5 µg/L

PNEC = Predicted No Effect Concentration

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

Chemical: *starch*

CAS No.: 9005-84-9

Water hazard class (DE): 1

30 mL NH₄ -1

Chemical: *sodium hydroxide solution*

CAS No.: 1310-73-2

Avoid contact of substance/mixture to 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

Chemical: *tri-sodium citrate*

CAS No.: 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

2,5 g NH₄ -2

Chemical: *dichloroisocyanuric acid, Na salt*

CAS No.: 2893-78-9

Water hazard class (DE): 3

Storage class (VCI): 13

Chemical: *sodium chloride*

CAS No.: 7647-14-5

Water hazard class (DE): 1

Storage class (VCI): 12-13

10 mL NH₄ -3

Chemical: *sodium nitroprusside*

CAS No.: 13755-38-9

Water hazard class (DE): 3

Storage class (VCI): 6.1 B

Chemical: *ethanol*

CAS No.: 64-17-5

PNEC(fresh water) : 0.96 mg/L

PNEC = Predicted No Effect Concentration

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

Dispersion coefficient_(octanol-water) : -0.31

Storage class (VCI): 3

Chemical: *thymol*

CAS No.: 89-83-8

Harmful to aquatic life with long lasting effects. Avoid contact of substance/mixture to environment.

Environmental hazards must not be labelled with P phrases until 125 mL (EU 1272/2008 Annex I - 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

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30 mL NO₂ -1

Chemical: *sulfanilamide*

CAS No.: 63-74-1

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

Storage class (VCI): 12-13

Chemical: *o-phosphoric acid*

CAS No.: 7664-38-2

LC50_{fish/96h}: 3-3.5 mg/L

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

Storage class (VCI): 8 B

5 g NO₂ -2

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

CAS No.: 1465-25-4

Water hazard class (DE): 3

Storage class (VCI): 13

Chemical: *citric acid*

CAS No.: 77-92-9

PNEC(fresh water): 440 mg/L

PNEC = Predicted No Effect Concentration

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

Dispersion coefficient_(octanol-water): -1.72

Storage class (VCI): 12-13

25 mL PO₄ -1

Chemical: *ammonium heptamolybdate*

CAS No.: 12054-85-2

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

Storage class (VCI): 12-13

Chemical: *sulfuric acid*

CAS No.: 7664-93-9d

PNEC(fresh water): 2.5 µg/L

PNEC = Predicted No Effect Concentration

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

25 mL PO₄ -2

Chemical: *sodium disulfite*

CAS No.: 7681-57-4

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

12.2 Persistence and degradability

not necessary

12.3 Bioaccumulative potential

not necessary

12.4 Mobility in soil

not necessary

12.5 Results of PBT and vPvB assessment

no data available

12.6 Other adverse effects

no additional data available

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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.

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
Classification code: M11 Tunnel restriction code: E
Limited Quantity: acc. ADR 3.3.1/251: see LQ in Alternative declaration for transportation
Air transport
PAX: 960 max. weight PAX: 10 KG
CAO: 960 max. weight CAO: 10 KG
Maritime transport
EmS: F-A, S-P Storage category: A

Or use **Alternative declaration for transportation:**

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

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
Classification code: F1 Tunnel restriction code: E
Limited Quantity: 1 L
Excepted Quantity: E 2 Special instructions: 640C
Air transport
PAX: 353 max. weight PAX: 5 L
CAO: 364 max. weight CAO: 60 L
Maritime transport
EmS: F-E, S-E Storage category: B

14.1 UN number: 3264 **14.2 UN proper shipping name:** Corrosive liquid, acidic, inorganic, n.o.s. (hydrochloric acid, sulfuric acid, o-phosphoric acid, sodium disphosphate)
14.3 Class: 8 **14.4 Packing group:** II
Road transport
Classification code: C1 Tunnel restriction code: E
Limited Quantity: 1 L
Excepted Quantity: E 2
Air transport
PAX: 851 max. weight PAX: 1 L
CAO: 855 max. weight CAO: 30 L
Maritime transport
EmS: F-A, S-B Storage category: B

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
Classification code: C5 Tunnel restriction code: E
Limited Quantity: 1 L
Excepted Quantity: E 2
Air transport
PAX: 851 max. weight PAX: 1 L
CAO: 855 max. weight CAO: 30 L
Maritime transport
EmS: F-A, S-B Storage category: B

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

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not necessary

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

not applicable

SECTION 15: Regulatory information

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

German act governing protection from hazardous substances (Chemicals Act / Chemikaliengesetz- ChemG), revised on August 2013
German order governing protection from hazardous substances (Ordinance on Hazardous Substances / Gefahrstoffverordnung - GefStoffV), revised on November 2010, according to Directive 98/24/EC
TRGS 200, German engineering rules governing the classification and labelling of hazardous substances, preparations and products, updated October 2011
MN Leaflet/User manual, also see www.mn-net.com
Look for your country-specific regulations.

15.2 Chemical safety assessment

not necessary for these small amounts ---

SECTION 16: Other information

16.1 List of H and P phrases

16.1.1 List of relevant H phrases

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.

16.1.2 List of relevant P phrases

P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P233 Keep container tightly closed.
P260D Do not breathe vapours.
P260sh Do not breathe dust/vapours.
P264W Wash with water thoroughly after handling.
P273 Avoid release to the environment.
P280sh Wear protective gloves/eye protection.
P301+312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
P303+361+353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
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.
P330 Rinse mouth.
P390 Absorb spillage to prevent material damage.

16.2 Training advice

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.

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 Further information

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product to which the information refers. Accordingly MACHEREY-NAGEL GmbH & Co. KG will not be responsible for damages resulting from use of or reliance upon this information. See terms and conditions at the end of our price lists for additional information.

16.5 Sources of key data

Regulation 453/2010/EU REACH - REQUIREMENTS FOR THE COMPILATION OF SAFETY DATA SHEETS

Regulation 487/2013/EU, 4th adaptation of CLP regulation to technical and scientific progress

Regulation 669/2018/EU, 4th adaptation of CLP regulation to technical and scientific progress

Regulation 1480/2018/EU, 4th adaptation of CLP regulation to technical and scientific progress

Regulation 849/2021/EU, 4th adaptation of CLP regulation to technical and scientific progress

TRGS 900, German engineering rules governing limits in air at work, updated 03/2019

SUVA .CH, Limits in air at work 2009, revised on 01.2009

KÜHN, BIRETT Merkblätter Gefährliche Arbeitsstoffe (Data Sheets of Hazardous Substances)

Revisions/Updates

Reason for Revision: 2016-03 Adaptation of regulation 1221/2015/EU

2017-08 Adaption of new ethanol denaturation 2016/1867/EU