

Safety Data Sheet

according to Regulations REACH 1907/2006/EC

REF: 931601

VISOCOLOR soil case, with accessories

Page: 1/33

Printing date: 19.08.2024

Date of issue: 17.01.2024

Version: 5.3.2.25

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

1.1 Product identifier

REF 931601
Product name VISOCOLOR soil case, with accessories

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.

2 x 25 mL pH 4-10	UFI: CXUT-J3TX-U20V-GTXN
1 x 30 mL P-1	UFI: J1VT-23HC-520D-55HQ
1 x 30 mL P-2	UFI: C6ST-C3R8-2201-AW9K
1 x 30 mL P-K	UFI: G3VT-K36R-F20V-TH3S
1 x 1 L CaCl ₂ solution	
1 x 1 L CAL solution	
1 x 100 mL CaCl ₂ stock solution	UFI: 3UWT-Q30P-K20S-1AS2
1 x 100 mL CAL stock solution	
1 x 30 mL Pyrophosphate solution	
2 x 25 mL K-1	UFI: 20RT-932P-S204-244P
1 x 12 g K-2	UFI: 42RT-S3S3-220M-QFQR
1 x 100 Indicator sticks	
1 x 100 test strips	
2 x 30 mL NH ₄ ⁺ -1	UFI: 1MAV-U314-T205-DEXY
1 x 100 p. folded filter papers	
1 x 100 Test sticks Ammonium	
1 x 500 mL dist. water	

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:

<<http://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

Signal word

DANGER

Hazard identification

H225
H302
H314
EUH031

Hazard classes/categories

Flam. Liq. 2
Acute Tox. 4 oral
Skin Corr. 1 B
-



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

1 L CaCl_2 solution



GHS07

Signal word

WARNING

Hazard identification

Hazard classes/categories

H319

Eye Irrit. 2

100 mL CaCl_2 stock solution



GHS07

Signal word

WARNING

Hazard identification

Hazard classes/categories

H319

Eye Irrit. 2

30 mL P-1



GHS05

Signal word

DANGER

Hazard identification

Hazard classes/categories

H314

Skin Corr. 1 B

25 mL K-1



GHS05

Signal word

DANGER

Hazard identification

Hazard classes/categories

H314

Skin Corr. 1 B

30 mL $\text{NH}_4^+ -1$



GHS05

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Signal word

DANGER

Hazard identification

Hazard classes/categories

H314

Skin Corr. 1 B

12 g K-2



GHS07

Signal word

WARNING

Hazard identification

Hazard classes/categories

H302

Acute Tox. 4 oral

H315

Skin Irrit. 2

H319

Eye Irrit. 2

25 mL pH 4-10



GHS02

Signal word

DANGER

Hazard identification

Hazard classes/categories

H225

Flam. Liq. 2

1 L CAL solution

Signal word

Do not need labelling as hazardous

No hazard class

100 mL CAL stock solution

Signal word

Do not need labelling as hazardous

No hazard class

30 mL P-K



GHS05

Signal word

DANGER

Hazard identification

Hazard classes/categories

H314

Skin Corr. 1 B

30 mL P-2

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GHS05

Signal word

DANGER

Hazard identification

Hazard classes/categories

EUH031

-

H318

Eye Dam. 1

500 mL dist. water

Signal word

Do not need labelling as hazardous

-

No hazard class

100 Test sticks Ammonium

Signal word

Do not need labelling as hazardous

-

No hazard class

100 p. folded filter papers

Signal word

Do not need labelling as hazardous

-

No hazard class

100 test strips

Signal word

Do not need labelling as hazardous

-

No hazard class

100 Indicator sticks

Signal word

Do not need labelling as hazardous

-

No hazard class

30 mL Pyrophosphate solution

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).

1 L CaCl₂ solution

Do not need labelling as hazardous



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Signal word: -

100 mL CaCl₂ stock solution



GHS07

Signal word: WARNING

30 mL P-1



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 K-1



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

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.

12 g K-2



GHS07

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Signal word: WARNING

25 mL pH 4-10



GHS02

Signal word: DANGER

1 L CAL solution

Do not need labelling as hazardous

Signal word: -

100 mL CAL stock solution

Do not need labelling as hazardous

Signal word: -

30 mL P-K



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 P-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.

500 mL dist. water

Do not need labelling as hazardous

Signal word: -

100 Test sticks Ammonium

Do not need labelling as hazardous

Signal word: -

100 p. folded filter papers

Do not need labelling as hazardous

Signal word: -

100 test strips

Do not need labelling as hazardous

Signal word: -

100 Indicator sticks

Do not need labelling as hazardous

Signal word: -

30 mL Pyrophosphate solution

Do not need labelling as hazardous

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Signal word: -

Label elements of the complete product



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.

2.3 Other hazards

Possible hazards from physicochemical properties

Generally in the case of pH values are less than 2 or higher than 11.5 then it is corrosive. Flammable properties.

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

1 L CaCl₂ solution

100 mL CaCl₂ stock solution

Substance name: calcium chloride (dihydrate)
CAS No.: 10035-04-8

Substance rating: H319, Eye Irrit. 2
Formula: CaCl₂ · 2H₂O
Pseudonym (de): Chlorcalcium
REACH Reg. No.: 01-2119494219-28-xxxx
EC No.: 233-140-8
Concentration: 10 - <20 %
acc. CLP (GHS): H319, Eye Irrit. 2

Indice No.: 017-013-00-2

30 mL P-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: 2 - <5 % 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: H314, Skin Corr. 1 B
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
Specific concentration limit: Eye Irrit. 2; H319: 5 % ≤ C < 15 % - Skin Irrit. 2; H315: 5 % ≤ C < 15 % - Skin Corr 1A; H314 c ≥ 15%
Concentration: 15 - <30 %
acc. CLP (GHS): H314, Skin Corr. 1 B

25 mL K-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: 2 - <5 %
acc. CLP (GHS): H314, Skin Corr. 1 B

30 mL NH_4^+ -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: 20 - <35 %
acc. CLP (GHS): H314, Skin Corr. 1 B

12 g K-2

Substance name: *sodium tetraphenylborate*
CAS No.: 143-66-8

Substance rating: H301, Acute Tox. 3 oral, H315, Skin Irrit. 2, H319, Eye Irrit. 2
Formula: $C_{24}H_{20}BNa$
EC No.: 205-605-5
Concentration: 14 - <35 %
acc. CLP (GHS): H302, Acute Tox. 4 oral, H315, Skin Irrit. 2, H319, Eye Irrit. 2

25 mL pH 4-10



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Substance name:	<i>ethanol</i>		
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:	90 - <100 %		
acc. CLP (GHS):	H225, Flam. Liq. 2		

Substance name:	<i>phenolphthalein (pH indicator)</i>		
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	Indice No.:	604-076-00-1
Concentration:	0 - <0,1 %		
acc. CLP (GHS):	The criteria for classification are not fulfilled.		

Substance name:	<i>indicator dye(s)</i>		
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.		

1 L CAL solution

Substance name:	<i>acetic acid</i>		
CAS No.:	64-19-7		
Substance rating:	H226, Flam. Liq. 3, H314, Skin Corr. 1 A, H318, Eye Dam. 1		
Formula:	$C_2H_4O_2$; CH_3-COOH		
REACH Reg. No.:	01-2119475328-30-xxxx		
EC No.:	200-580-7	Indice No.:	607-002-00-6
Concentration:	1 - <3 %		
acc. CLP (GHS):	The criteria for classification are not fulfilled.		

100 mL CAL stock solution

Substance name:	<i>calcium acetate</i>		
CAS No.:	62-54-4		
Substance rating:	No criteria for classification or naming of chemical not required.		
Formula:	$Ca(CH_3COO)_2$		
REACH Reg. No.:	01-2119987569-11-xxxx		
EC No.:	200-540-9		
Concentration:	1 - <10 %		
acc. CLP (GHS):	The criteria for classification are not fulfilled.		

Substance name:	<i>acetic acid</i>		
CAS No.:	64-19-7		
Substance rating:	H226, Flam. Liq. 3, H314, Skin Corr. 1 A, H318, Eye Dam. 1		
Formula:	$C_2H_4O_2$; CH_3-COOH		
REACH Reg. No.:	01-2119475328-30-xxxx		
EC No.:	200-580-7	Indice No.:	607-002-00-6
Concentration:	5 - <10 %		
acc. CLP (GHS):	The criteria for classification are not fulfilled.		

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30 mL P-K

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

Indice No.: 016-020-00-8

Specific concentration limit: Eye Irrit. 2; H319: 5 % ≤ C < 15 % - Skin Irrit. 2; H315: 5 % ≤ C < 15 % - Skin Corr 1A; H314 c ≥ 15%

Concentration: 15 - <30 %

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

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

Indice No.: 016-020-00-8

Specific concentration limit: Eye Irrit. 2; H319: 5 % ≤ C < 15 % - Skin Irrit. 2; H315: 5 % ≤ C < 15 % - Skin Corr 1A; H314 c ≥ 15%

Concentration: 30 - <51 %

acc. CLP (GHS): H314, Skin Corr. 1 B

30 mL P-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

Indice No.: 016-063-00-2

Concentration: 10 - <25 %

acc. CLP (GHS): H318, Eye Dam. 1, EUH031,

500 mL dist. water

Substance name: *water*
CAS No.: 7732-18-5

Substance rating: No criteria for classification or naming of chemical not required.
Formula: H_2O

REACH Reg. No.: exempt, Annex IV

EC No.: 231-791-2

Concentration: 90 - <100 %

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

100 Test sticks Ammonium

Substance name: *cellulose paper*
CAS No.: 9004-34-6

Substance rating: No criteria for classification or naming of chemical not required.
Formula: $(C_6H_{10}O_5)_n$

REACH Reg. No.: exempt, Annex IV

EC No.: 232-674-9

Concentration: 1 - <10 %

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

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Substance name: *PVC foil (CAS 9002-86-2)*
CAS No.: -

Substance rating: No criteria for classification or naming of chemical not required.
Concentration: 95 - <100 %
acc. CLP (GHS): The criteria for classification are not fulfilled.

100 p. folded filter papers

Substance name: *cellulose paper*
CAS No.: 9004-34-6

Substance rating: No criteria for classification or naming of chemical not required.
Formula: $(C_6H_{10}O_5)_n$
REACH Reg. No.: exempt, Annex IV
EC No.: 232-674-9
Concentration: 90 - <100 %
acc. CLP (GHS): The criteria for classification are not fulfilled.

100 test strips

Substance name: *cellulose paper*
CAS No.: 9004-34-6

Substance rating: No criteria for classification or naming of chemical not required.
Formula: $(C_6H_{10}O_5)_n$
REACH Reg. No.: exempt, Annex IV
EC No.: 232-674-9
Concentration: 1 - <10 %
acc. CLP (GHS): The criteria for classification are not fulfilled.

Substance name: *chemicals/mixture until 1%*
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.

Substance name: *PVC foil (CAS 9002-86-2)*
CAS No.: -

Substance rating: No criteria for classification or naming of chemical not required.
Concentration: 95 - <100 %
acc. CLP (GHS): The criteria for classification are not fulfilled.

100 Indicator sticks

Substance name: *cellulose paper*
CAS No.: 9004-34-6

Substance rating: No criteria for classification or naming of chemical not required.
Formula: $(C_6H_{10}O_5)_n$
REACH Reg. No.: exempt, Annex IV
EC No.: 232-674-9
Concentration: 1 - <10 %
acc. CLP (GHS): The criteria for classification are not fulfilled.

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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.

Substance name: *PVC foil (CAS 9002-86-2)*
CAS No.: -

Substance rating: No criteria for classification or naming of chemical not required.
Concentration: 95 - <100 %
acc. CLP (GHS): The criteria for classification are not fulfilled.

30 mL Pyrophosphate solution

Substance name: *phosphate buffer solution*
CAS No.: -

Substance rating: No criteria for classification or naming of chemical not required.
Formula: $K/Na \ 1-3 \ H \ 2-0 \ PO \ 4 \cdot x \ H \ 2 \ O$
Concentration: 1 - <5 %
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

100 p. folded filter papers

Chemical: *cellulose paper*

CAS No.: 9004-34-6

TRGS 900 (DE): Staub 1.25 A / 4 E mg/m³
E/e respirable

SUVA(CH) MAK value: 3 a ppm

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 P-1

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

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

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

25 mL K-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

100 mL CaCl₂ stock solution

Chemical: *calcium chloride (dihydrate)*

CAS No.: 10035-04-8

30 mL P-2

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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

100 mL CAL stock solution

Chemical: *calcium acetate* CAS No.: 62-54-4

Chemical: *acetic acid* CAS No.: 64-19-7
 DNEL: [loc, inh] 25 mg/m³
DNEL = Derived No-Effect Level (for workers)
 PNEC (fresh water): 3.058 mg/L
PNEC = Predicted No Effect Concentration
 EU value: [TWA] 25 / [STEL] 50 mg/m³
 TRGS 900 (DE): 10 mL/m³ / 25 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: 10 ppm / 25 mg/m³
 NIOSH: [TWA] 10 ppm / 25 mg/m³ ; [STEL] 15 ppm / 37 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] 10 ppm / 25 mg/m³

100 Indicator sticks

Chemical: *PVC foil (CAS 9002-86-2)* CAS No.: -
 Chemical: *indicator dye(s)* CAS No.: -
 Chemical: *cellulose paper* CAS No.: 9004-34-6
 TRGS 900 (DE): Staub 1.25 A / 4 E mg/m³
 E/e respirable
 SUVA(CH) MAK value: 3 a ppm
 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

100 test strips

Chemical: *PVC foil (CAS 9002-86-2)* CAS No.: -
 Chemical: *cellulose paper* CAS No.: 9004-34-6
 TRGS 900 (DE): Staub 1.25 A / 4 E mg/m³
 E/e respirable
 SUVA(CH) MAK value: 3 a ppm
 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

Chemical: *chemicals/mixture until 1%* CAS No.: -

100 Test sticks Ammonium

Chemical: *PVC foil (CAS 9002-86-2)* CAS No.: -
 Chemical: *cellulose paper* CAS No.: 9004-34-6
 TRGS 900 (DE): Staub 1.25 A / 4 E mg/m³
 E/e respirable
 SUVA(CH) MAK value: 3 a ppm
 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

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25 mL pH 4-10

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

12 g K-2

Chemical: *sodium tetraphenylborate*

CAS No.: 143-66-8

30 mL Pyrophosphate solution

Chemical: *phosphate buffer solution*

CAS No.: -

30 mL P-K

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

1 L CAL solution

Chemical: *acetic acid*

CAS No.: 64-19-7

DNEL: [loc, inh] 25 mg/m³

DNEL = Derived No-Effect Level (for workers)

PNEC (fresh water): 3.058 mg/L

PNEC = Predicted No Effect Concentration

EU value: [TWA] 25 / [STEL] 50 mg/m³

TRGS 900 (DE): 10 mL/m³ / 25 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: 10 ppm / 25 mg/m³

NIOSH: [TWA] 10 ppm / 25 mg/m³; [STEL] 15 ppm / 37 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] 10 ppm / 25 mg/m³

500 mL dist. water

Chemical: *water*

CAS No.: 7732-18-5

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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

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

100 p. folded filter papers

a) State of aggregation:	solid
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:	0 %
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 P-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:	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:	1,21 g/cm ³
q) Relative vapour density ($\rho_{air=1}$):	no data available
r) Particle size:	no data available



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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:	14
l) Kinematic viscosity:	no data available
m) Solubility in water:	0-100 %
n) Dispersion coefficient (K _{ow}):	no data available
o) Vapour pressure (20°C):	no data available
p) Specific gravity:	1,35 g/mL
q) Relative vapour density (air=1):	no data available
r) Particle size:	no data available

25 mL K-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:	12-13
l) Kinematic viscosity:	no data available
m) Solubility in water:	0-100 %
n) Dispersion coefficient (K _{ow}):	no data available
o) Vapour pressure (20°C):	no data available
p) Specific gravity:	1,04 g/cm ³
q) Relative vapour density (air=1):	no data available
r) Particle size:	no data available

100 mL CaCl₂ stock solution

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:	6-8
l) Kinematic viscosity:	no data available
m) Solubility in water:	0-100 %
n) Dispersion coefficient (K _{ow}):	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

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30 mL P-2

a) State of aggregation:	liquid
b) Colour:	colourless
c) Odor:	penetrative
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 ($\text{air}=1$):	no data available
r) Particle size:	no data available

100 mL CAL stock solution

a) State of aggregation:	liquid
b) Colour:	colourless
c) Odor:	acetic
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:	0-100 %
n) Dispersion coefficient ($K_{o/w}$):	no data available
o) Vapour pressure (20°C):	no data available
p) Specific gravity:	1,02 g/cm ³
q) Relative vapour density ($\text{air}=1$):	no data available
r) Particle size:	no data available

100 Indicator sticks

a) State of aggregation:	solid
b) Colour:	colored
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 ($\text{air}=1$):	no data available
r) Particle size:	no data available

100 test strips

a) State of aggregation:	solid
b) Colour:	colored
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:	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 ($\text{air}=1$):	no data available
r) Particle size:	no data available

100 Test sticks Ammonium

a) State of aggregation:	solid
b) Colour:	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:	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 ($\text{air}=1$):	no data available
r) Particle size:	no data available

25 mL pH 4-10

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:	18 °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:	0,79 g/cm³
q) Relative vapour density ($\text{air}=1$):	no data available
r) Particle size:	no data available

12 g K-2

a) State of aggregation:	powder (solid)
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



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i) Flashing temperature:	no data available
j) Decomposition temperature:	no data available
k) pH value:	6-8 (10%)
l) Kinematic viscosity:	no data available
m) Solubility in water:	0-30 %
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 Pyrophosphate solution

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:	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
q) Relative vapour density ($\rho_{air=1}$):	no data available
r) Particle size:	no data available

30 mL P-K

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:	1,22 g/cm³
q) Relative vapour density ($\rho_{air=1}$):	no data available
r) Particle size:	no data available

1 L CAL solution

a) State of aggregation:	liquid
b) Colour:	colourless
c) Odor:	acetic
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



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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:	no data available
q) Relative vapour density ($\rho_{air=1}$):	no data available
r) Particle size:	no data available

500 mL dist. water

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:	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:	1,00 g/cm³
q) Relative vapour density ($\rho_{air=1}$):	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.

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.

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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.

100 p. folded filter papers

Chemical: *cellulose paper* CAS No.: 9004-34-6
TSCA Inventory: listed California Proposition 65 List: not listed
Exposure Routes: inhalation, 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: not listed
South Korea TCCA: not listed
Korea Exist.Chem.Inventory: KE-05339
LD50 orl rat : > 5000 mg/kg
LC50 ihl rat : > 5,800 mg/L/4H

30 mL P-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, 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 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 mus : 0,85 mg/L/4H

TRGS 905 (DE): Kat 4

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

30 mL NH₄⁺-1

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 $\geq 1,0\%$ / $\geq 1,0\%$, 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 orl mus : 40 mg/kg

25 mL K-1

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 orl mus : 40 mg/kg

100 mL CaCl₂ stock solution

Chemical: *calcium chloride (dihydrate)* CAS No.: 10035-04-8
TSCA Inventory: listed (CAS 10043-52-4)
Korea Exist.Chem.Inventory: KE-04496
LD50 orl rat : 1000 mg/kg

30 mL P-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

100 mL CAL stock solution

Chemical: *calcium acetate* CAS No.: 62-54-4
TSCA Inventory: listed
LD50 orl rat : 4280 mg/kg

Chemical: *acetic acid* CAS No.: 64-19-7
TSCA Inventory: listed California Proposition 65 List: not listed
Exposure Routes: inhalation, skin and/or eye contact
Target Organs: Eyes, skin, respiratory system, teeth
Symptoms: irritation eyes, skin, nose, throat; eye, skin burns; skin sensitization; dental erosion; black skin, hyperkeratosis; conjunctivitis, lacrimation (di)
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-00013
LD50 orl rat : 3310 mg/kg
LD50 orl mus : 4960 mg/kg

100 Indicator sticks

Chemical: *PVC foil (CAS 9002-86-2)* CAS No.: -
TSCA Inventory: listed

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

Chemical: *cellulose paper* CAS No.: 9004-34-6
TSCA Inventory: listed California Proposition 65 List: not listed
Exposure Routes: inhalation, 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: not listed



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South Korea TCCA: not listed
Korea Exist.Chem.Inventory: KE-05339
LD50 orl rat : > 5000 mg/kg
LC50 ihl rat : > 5,800 mg/L/4H

100 test strips

Chemical: PVC foil (CAS 9002-86-2)
TSCA Inventory: listed

CAS No.: -

Chemical: cellulose paper CAS No.: 9004-34-6
TSCA Inventory: listed California Proposition 65 List: not listed
Exposure Routes: inhalation, 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: not listed
South Korea TCCA: not listed
Korea Exist.Chem.Inventory: KE-05339
LD50 orl rat : > 5000 mg/kg
LC50 ihl rat : > 5,800 mg/L/4H

Chemical: chemicals/mixture until 1%
TSCA Inventory: all listed, <1%
Korea Exist.Chem.Inventory: listed

CAS No.: -

100 Test sticks Ammonium

Chemical: PVC foil (CAS 9002-86-2)
TSCA Inventory: listed

CAS No.: -

Chemical: cellulose paper CAS No.: 9004-34-6
TSCA Inventory: listed California Proposition 65 List: not listed
Exposure Routes: inhalation, 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: not listed
South Korea TCCA: not listed
Korea Exist.Chem.Inventory: KE-05339
LD50 orl rat : > 5000 mg/kg
LC50 ihl rat : > 5,800 mg/L/4H

25 mL pH 4-10

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

CAS No.: -

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



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LC₅₀ Low ihl gpg : 21,900 mg/L
LC₅₀ 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

12 g K-2

Chemical: *sodium tetraphenylborate* CAS No.: 143-66-8
TSCA Inventory: listed
Japan CSCL/PRTR: PRTR: >1,0% B class I
Korea Exist.Chem.Inventory: KE-31629
LD₅₀ orl rat : 288 mg/kg
Acute Effects: Cause after oral intake, impairments of health when ingested in small quantities.

30 mL Pyrophosphate solution

Chemical: *phosphate buffer solution* CAS No.: -
TSCA Inventory: all listed
Korea Exist.Chem.Inventory: listed

30 mL P-K

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 PDSCL: Deleterious Substance
Japan ISHL: listed ≥1,0%/≥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

1 L CAL solution

Chemical: *acetic acid* CAS No.: 64-19-7
TSCA Inventory: listed California Proposition 65 List: not listed
Exposure Routes: inhalation, skin and/or eye contact
Target Organs: Eyes, skin, respiratory system, teeth
Symptoms: irritation eyes, skin, nose, throat; eye, skin burns; skin sensitization; dental erosion; black skin, hyperkeratosis; conjunctivitis, lacrimation (di
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-00013
LD₅₀ orl rat : 3310 mg/kg
LD₅₀ orl mus : 4960 mg/kg



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500 mL dist. water

Chemical: water

CAS No.: 7732-18-5

TSCA Inventory: listed

Korea Exist.Chem.Inventory: KE-35400

LD50 orl rat : > 90000 mg/kg

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.

100 p. folded filter papers

Substance name: cellulose paper

CAS-Nr.: 9004-34-6

Water hazard class (DE): nwg

Storage class (VCI): 11

30 mL P-1

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

Substance name: ammonium heptamolybdate

CAS-Nr.: 12054-85-2

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

Storage class (VCI): 12-13

30 mL NH₄⁺-1

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

25 mL K-1

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

100 mL CaCl₂ stock solution

Substance name: calcium chloride (dihydrate)

CAS-Nr.: 10035-04-8

LC50 daphnia magna/48h : 3005 mg/L

LC50 fish/96h : 10.65 g/L

LC50 scenedesmus quadricauda/72h : 3130 mg/L

Water hazard class (DE): 1 WGK No.: 0220

Storage class (VCI): 12-13



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30 mL P-2

Substance name: *sodium disulfite*

CAS-Nr.: 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

100 mL CAL stock solution

Substance name: *calcium acetate*

CAS-Nr.: 62-54-4

Water hazard class (DE): 1

Storage class (VCI): 12-13

Substance name: *acetic acid*

CAS-Nr.: 64-19-7

PNEC (fresh water) : 3.058 mg/L

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

LC50 fish/96h : [4d] 301-1000 mg/L

EC50 daphnia/48h : 301-1000 mg/L

IC50 scenedesmus quadricauda/72h : 301-1000 mg/L

Water hazard class (DE): 1 WGK No.: 0093

Storage class (VCI): 8 B

100 Indicator sticks

Substance name: *PVC foil (CAS 9002-86-2)*

CAS-Nr.: -

Substance name: *indicator dye(s)*

CAS-Nr.: -

Storage class (VCI): 12-13

Substance name: *cellulose paper*

CAS-Nr.: 9004-34-6

Water hazard class (DE): nwg

Storage class (VCI): 11

100 test strips

Substance name: *PVC foil (CAS 9002-86-2)*

CAS-Nr.: -

Substance name: *cellulose paper*

CAS-Nr.: 9004-34-6

Water hazard class (DE): nwg

Storage class (VCI): 11

Substance name: *chemicals/mixture until 1%*

CAS-Nr.: -

Water hazard class (DE): 1

Storage class (VCI): 12-13

100 Test sticks Ammonium

Substance name: *PVC foil (CAS 9002-86-2)*

CAS-Nr.: -

Substance name: *cellulose paper*

CAS-Nr.: 9004-34-6

Water hazard class (DE): nwg

Storage class (VCI): 11

25 mL pH 4-10

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 Effected 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 putita/16h : [EC5] 6500 mg/L

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



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Storage class (VCI): 3

Substance name: *phenolphthalein (pH indicator)* CAS-Nr.: 77-09-8
 Water hazard class (DE): 1
 Storage class (VCI): 12-13

12 g K-2

Substance name: *sodium tetraphenylborate* CAS-Nr.: 143-66-8
 Water hazard class (DE): 3
 Storage class (VCI): 12-13

30 mL Pyrophosphate solution

Substance name: *phosphate buffer solution* CAS-Nr.: -
 Water hazard class (DE): 1
 Storage class (VCI): 12

30 mL P-K

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

1 L CAL solution

Substance name: *acetic acid* CAS-Nr.: 64-19-7
 PNEC (fresh water): 3.058 mg/L
 PNEC = Predicted No Effect Concentration = concentration at which no effect on the environment is expected
 LC50 fish/96h: [4d] 301-1000 mg/L
 EC50 daphnia/48h: 301-1000 mg/L
 IC50 scenedesmus quadricauda/72h: 301-1000 mg/L
 Water hazard class (DE): 1 WGK No.: 0093
 Storage class (VCI): 8 B

500 mL dist. water

Substance name: *water* CAS-Nr.: 7732-18-5

12.2 Persistence and degradability

12.3 Bioaccumulative potential

Substance name: *acetic acid* CAS-Nr.: 64-19-7
 Dispersion coefficient (K_{ow}): -0,17
 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

1 L CAL solution

Substance name: *acetic acid* CAS-Nr.: 64-19-7
 Dispersion coefficient (K_{ow}): -0,17

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.

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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.

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	
Limited Quantity:	SV 251 L	Tunnel restriction code: E
Excepted Quantity:	E 0	
Special instructions:	251, 340	

Air transport IATA DGR

Limited Quantity:	PAX: 960	max. quantity PAX: 10 Kg
	CAO: 960	max. quantity CAO: 10 Kg
Excepted Quantity:	E 0	

Maritime transport IMDG

EmS:	F-A, S-P	Staukategorie: A
Special instructions:	251	

14.5 Environmental hazards

none, contains only small quantities of hazardous 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
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



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not necessary for these small amounts

SECTION 16: Other information

16.1 Changes compared to the last version

Between versions 5.3.2.25 and 2.2.2.2 following changes were applied: -0 product data corrected - 1 product component data corrected - 23 substance data corrected

16.2 List of H and P phrases

16.2.1 List of relevant H phrases

H	Between versions 5.3.2.25 and 2.2.2.2 following changes were applied: -0 product data corrected - 1 product component data corrected - 23 substance data corrected
H225	Highly flammable liquid and vapour.
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.
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].
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



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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
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:	fish, 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:	fish, 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:	fish, 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

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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.