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 CaCl₂ solution
- 1 x 1 L CAL solution
- 1 x 100 mL CaCl₂ stock solution
- 1 x 100 mL CAL stock solution
- 1 x 30 mL Pyrophosphate solution
- 2 x 25 mL K-1
- 1 x 12 g K-2
- 1 x 100 Indicator sticks
- 1 x 100 test strips
- 2 x 30 mL NH₄⁺ + -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.

Uses advised against
not described

1.3 Details of the supplier of the safety data sheet

Manufactured by:
MACHEM-NAGEL GmbH & Co. KG
Valenciennes 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

Signal word: DANGER

GHS02
GHS05
GHS07
### 2.1 Classification of the substance or mixture according to Regulation (EC) 1272/2008

**1 L CaCl₂ solution**

<table>
<thead>
<tr>
<th>Hazard identification</th>
<th>Hazard classes/categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>H225</td>
<td>Flam. Liq. 2</td>
</tr>
<tr>
<td>H302</td>
<td>Acute Tox. 4 oral</td>
</tr>
<tr>
<td>H314</td>
<td>Skin Corr. 1B</td>
</tr>
<tr>
<td>EUH031</td>
<td>031 not defined</td>
</tr>
</tbody>
</table>

Do not need labelling as hazardous

**100 mL CaCl₂ stock solution**

Signal word: WARNING

Hazard identification: H319

<table>
<thead>
<tr>
<th>Hazard classes/categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eye Irrit. 2</td>
</tr>
</tbody>
</table>

**30 mL P-1**

Signal word: DANGER

Hazard identification: H314

<table>
<thead>
<tr>
<th>Hazard classes/categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin Corr. 1B</td>
</tr>
</tbody>
</table>

**25 mL K-1**

Signal word: DANGER

Hazard identification: H314

<table>
<thead>
<tr>
<th>Hazard classes/categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin Corr. 1B</td>
</tr>
</tbody>
</table>

**30 mL NH₄⁺ -1**

Signal word: DANGER

Hazard identification: H314

<table>
<thead>
<tr>
<th>Hazard classes/categories</th>
</tr>
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<tr>
<td>Skin Corr. 1B</td>
</tr>
<tr>
<td>Signal word</td>
</tr>
<tr>
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</tr>
<tr>
<td><strong>DANGER</strong></td>
</tr>
</tbody>
</table>

12 g K-2

<table>
<thead>
<tr>
<th>Signal word</th>
<th>Hazard identification</th>
<th>Hazard classes/categories</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>WARNING</strong></td>
<td>H302</td>
<td>Acute Tox. 4 oral</td>
</tr>
<tr>
<td></td>
<td>H315</td>
<td>Skin Irrit. 2</td>
</tr>
<tr>
<td></td>
<td>H319</td>
<td>Eye Irrit. 2</td>
</tr>
</tbody>
</table>

25 mL pH 4-10

<table>
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<th>Signal word</th>
<th>Hazard identification</th>
<th>Hazard classes/categories</th>
</tr>
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<tbody>
<tr>
<td><strong>DANGER</strong></td>
<td>H225</td>
<td>Flam. Liq. 2</td>
</tr>
</tbody>
</table>

1 L CAL solution

<table>
<thead>
<tr>
<th>Signal word</th>
<th>Hazard identification</th>
<th>Hazard classes/categories</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Do not need labelling as hazardous</td>
</tr>
<tr>
<td></td>
<td></td>
<td>No hazard class</td>
</tr>
</tbody>
</table>

100 mL CAL stock solution

<table>
<thead>
<tr>
<th>Signal word</th>
<th>Hazard identification</th>
<th>Hazard classes/categories</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td>Do not need labelling as hazardous</td>
</tr>
<tr>
<td></td>
<td></td>
<td>No hazard class</td>
</tr>
</tbody>
</table>

30 mL P-K

<table>
<thead>
<tr>
<th>Signal word</th>
<th>Hazard identification</th>
<th>Hazard classes/categories</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DANGER</strong></td>
<td>H314</td>
<td>Skin Corr. 1B</td>
</tr>
</tbody>
</table>

30 mL P-2
Signal word: DANGER

**Hazard identification**

**Hazard classes/categories**

<table>
<thead>
<tr>
<th>EUH031</th>
<th>H318</th>
</tr>
</thead>
<tbody>
<tr>
<td>031 not defined</td>
<td>Eye Dam. 1</td>
</tr>
</tbody>
</table>

500 mL dist. water

Do not need labelling as hazardous

No hazard class

100 Test sticks Ammonium

Do not need labelling as hazardous

No hazard class

100 p. folded filter papers

Do not need labelling as hazardous

No hazard class

100 test strips

Do not need labelling as hazardous

No hazard class

100 Indicator sticks

Do not need labelling as hazardous

No hazard class

30 mL Pyrophosphate solution

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 identificator(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 CaCl\(_2\) solution

Do not need labelling as hazardous
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, 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.

25 mL K-1

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.

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
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.

12 g K-2

GHS07

Signal word: WARNING

25 mL pH 4-10
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

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 P-2

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
Signal word: -
Label elements of the complete product

GHS02  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.

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
Avoid contact of substance/mixture to 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

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.

30 mL P-1

Substance name: sulfuric acid
CAS No.: 7664-93-9
Substance rating: H314, Skin Corr. 1B
Formula: \( H_2 SO_4 (H_2 O) \)
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. 1B
Safety Data Sheet
according to Regulations REACh 1907/2006/EC

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

Substance rating: No criteria for classification or naming of chemical not required.
Formula: \( H_{24} Mo_7 N_6 O_{24} \)
Pseudonym (de): Ammoniummolybdat
REACH Reg. No.: 01-2119498057-28-xxxx
EC No.: 234-722-4
Concentration: 2 - <5 %
Correlation factor: \( x \times 0.58 \) (= %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.

30 mL NH\(_4\)\(^+\)-1
Substance name: sodium hydroxide solution
CAS No.: 1310-73-2

Substance rating: H314, Skin Corr. 1B
Formula: NaOH, 2 H\(_2\)O
Pseudonym (de): Natronlauge
REACH Reg. No.: 01-2119457892-27-xxxx
EC No.: 215-185-5
Concentration: 20 - <35 %
Indice No.: 011-002-00-6
acc. CLP (GHS): H314, Skin Corr. 1B

25 mL K-1
Substance name: sodium hydroxide solution
CAS No.: 1310-73-2

Substance rating: H314, Skin Corr. 1B
Formula: NaOH, 2 H\(_2\)O
Pseudonym (de): Natronlauge
REACH Reg. No.: 01-2119457892-27-xxxx
EC No.: 215-185-5
Concentration: 2 - <5 %
Indice No.: 011-002-00-6
acc. CLP (GHS): H314, Skin Corr. 1B

100 mL CaCl\(_2\) stock solution
Substance name: calcium chloride (dihydrate)
CAS No.: 10035-04-8

Substance rating: H319, Eye Irrit. 2
Formula: CaCl\(_2\) \( \times 2H_2O \)
Pseudonym (de): Chlorcalcium
REACH Reg. No.: 01-2119494219-28-xxxx
EC No.: 233-140-8
Concentration: 10 - <20 %
Indice No.: 017-013-00-2
acc. CLP (GHS): H319, Eye Irrit. 2

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, 031 not defined
Formula: Na\(_2\)O\(_5\)S\(_2\)
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, 031 not defined
100 mL CAL stock solution

Substance name: calcium acetate
CAS No.: 62-54-4

Substance rating: No criteria for classification or naming of chemical not required.
Formula: Ca(CH$_3$COO)$_2$
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: acetic acid
CAS No.: 64-19-7

Substance rating: H226, Flam. Liq. 3, H314, Skin Corr. 1A, H318, Eye Dam. 1
Formula: C$_2$H$_4$O$_2$; CH$_3$-COOH
REACH Reg. No.: 01-2119475328-30-xxxx
EC No.: 200-580-7
Concentration: 5 - <10 %
Indice No.: 607-002-00-6
acc. CLP (GHS): The criteria for classification are not fulfilled.

100 Indicator sticks

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.

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

Substance rating: No criteria for classification or naming of chemical not required.
Concentration: 0,01 - <0,1 %
acc. CLP (GHS): The criteria for classification are not fulfilled.

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

Substance rating: No criteria for classification or naming of chemical not required.
Formula: (C$_6$H$_{10}$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.

100 test strips

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.
Safety Data Sheet
according to Regulations REACh 1907/2006/EC

REF: 931601 VISOCOLOR soil case, with accessories Page: 10/33
Printing date: 04.04.2023 Date of issue: 26.01.2023 Version: 2.2.2.25

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.

100 Test sticks Ammonium
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.

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: indicator dye(s)
CAS No.: -

Substance rating: No criteria for classification or naming of chemical not required.
Concentration: 0,01 - <0,1 %
acc. CLP (GHS): The criteria for classification are not fulfilled.

25 mL pH 4-10
Substance name: ethanol
CAS No.: 64-17-5
(denatured with 1% 2-butanone / 1% 2-propanol)
Substance rating: H225, Flam. Liq. 2
Formula: \(C_2H_6O; C_2H_5OH\)
Pseudonym (de): Äthylalkohol, vergiffter Spiritus
REACH Reg. No.: 01-2119457610-43-xxxx
EC No.: 200-578-6
Concentration: 90 - <100 %
acc. CLP (GHS): H225, Flam. Liq. 2
Indice No.: 603-002-00-5
Safety Data Sheet
according to Regulations REACh 1907/2006/EC

Substance name: phenolphthalein (pH indicator)
CAS No.: 77-09-8
Substance rating: H341, Muta. 2, H350, Carc. 1B, H361f, Repr. 2
Formula: C₂₀H₁₄O₄
Pseudonym (de): Indikator pH 8,2-9,8

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: C₂₄H₂₀BNa
EC No.: 205-605-5
Concentration: 14 - <35 % 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: KNa₁.₃H₂₆PO₄·ₓH₂O
Concentration: 1 - <5 % acc. CLP (GHS): The criteria for classification are not fulfilled.

30 mL P-K
Substance name: sulfuric acid
CAS No.: 7664-93-9
Substance rating: H314, Skin Corr. 1B
Formula: H₂SO₄ (H₂O)
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. 1B

1 L CAL solution
Substance name: acetic acid
CAS No.: 64-19-7
Substance rating: H226, Flam. Liq. 3, H314, Skin Corr. 1A, H318, Eye Dam. 1
Formula: C₂H₄O₂; CH₃-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.

500 mL dist. water
Safety Data Sheet
according to Regulations REACh 1907/2006/EC

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 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 to be carried out by an eye specialist. After INHAKE 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

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

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
Avoid contact of substance/mixture to environment.

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.

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 . 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.

SECTION 8: Exposure controls /personal protection

8.1 Control parameters

100 p. folded filter papers
Chemical: cellulose paper
TRGS 900 (DE): Staub 1.25 A / 4 E mg/m³
SUVA(CH) MAK value: 3 a ppm
NIOSH: TWA 10 (total) / 5 (resp) mg/m³
OSHA: TWA 15 (total) / 5 (resp) mg/m³

30 mL P-1
Chemical: sulfuric acid
DNEL = Derived No-Effect Level (for workers)
PNEC (fresh water): 2.5 µg/L
EU value: 0.1 e mg/m³
TRGS 900 (DE): 0.1 E mg/m³

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
OSHA: [TWA] 1 mg/m³

TRGS 900 (DE): amonium heptamolybdate
CAS No.: 12054-85-2

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
TRGS 900 (DE): 2 mg/m³

SUVA(CH) MAK value: 2 e mg/m³

NIOSH: 2 mg/m³

OSHA: [TWA] 2 mg/m³

25 ml K-1
Chemical: sodium hydroxide solution
CAS No.: 1310-73-2

DNEL: [inh] 1 mg/m³
TRGS 900 (DE): 2 mg/m³

SUVA(CH) MAK value: 2 e mg/m³

OSHA: [TWA] 2 mg/m³

100 ml CaCl₂ stock solution
Chemical: calcium chloride (dihydrate)
CAS No.: 10035-04-8

30 ml P-2
Chemical: sodium disulfite
CAS No.: 7681-57-4

DNEL: [inh] 225 mg/m³
TRGS 900 (DE): -

SUVA(CH) MAK value: 5 e mg/m³

OSHA: [TWA] 5 mg/m³

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

PNEC (fresh water): 3.058 mg/L

EU value: [TWA] 25 / [STEL] 50 mg/m³

TRGS 900 (DE): 10 mL/m³ / 25 mg/m³

SUVA(CH) MAK value: 10 ppm / 25 mg/m³

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

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
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
OSHA: TWA 15 (total) / 5 (resp) mg/m³

100 Test strips 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
OSHA: TWA 15 (total) / 5 (resp) mg/m³

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 = 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 sensitzizable (5a), skin sensitzizable (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
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)
OSHA: not listed

12 g K-2
Chemical: sodium tetraphenylborate  CAS No.: 143-66-8
Safety Data Sheet
according to Regulations REACh 1907/2006/EC

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: Information on basic 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 %

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 (o/w): no data available

30 mL NH₄⁺ -1
a) State of aggregation: liquid
b) Colour: colourless
c) Odor: odorless
d) Melting point: no data available
e) Boiling point: no data available
f) Flammability: no data available
g) Explosive limits (lower / upper): no data available
h) Flash point: no data available
i) Flashing temperature: no data available
j) Decomposition temperature: no data available
k) pH value: 14
l) Kinematic viscosity: no data available
m) Solubility in water: 0-100 %
n) Dispersion coefficient (o/w): no data available
### 25 mL K-1

- **State of aggregation:** liquid
- **Colour:** colourless
- **Odor:** odorless
- **Melting point:** no data available
- **Boiling point:** no data available
- **Flammability:** no data available
- **Explosive limits (lower / upper):** no data available
- **Flash point:** no data available
- **Flashing temperature:** no data available
- **Decomposition temperature:** no data available
- **pH value:** 12-13
- **Kinematic viscosity:** no data available
- **Solubility in water:** 0-100%
- **Vapour pressure (20°C):** no data available
- **Specific gravity:** 1.04 g/cm³
- **Relative vapour density (air=1):** no data available

### 100 mL CaCl₂ stock solution

- **State of aggregation:** liquid
- **Colour:** colourless
- **Odor:** odorless
- **Melting point:** no data available
- **Boiling point:** no data available
- **Flammability:** no data available
- **Explosive limits (lower / upper):** no data available
- **Flash point:** no data available
- **Flashing temperature:** no data available
- **Decomposition temperature:** no data available
- **pH value:** 6-8
- **Kinematic viscosity:** no data available
- **Solubility in water:** 0-100%
- **Dispersion coefficient (o/w):** no data available
- **Vapour pressure (20°C):** no data available
- **Specific gravity:** no data available
- **Relative vapour density (air=1):** no data available

### 30 mL P-2

- **State of aggregation:** liquid
- **Colour:** colourless
- **Odor:** penetrative
- **Melting point:** no data available
- **Boiling point:** no data available
- **Flammability:** no data available
- **Explosive limits (lower / upper):** no data available
- **Flash point:** no data available
- **Flashing temperature:** no data available
- **Decomposition temperature:** no data available
- **pH value:** 5-7
- **Kinematic viscosity:** no data available
- **Solubility in water:** 0-100%
- **Dispersion coefficient (o/w):** no data available
- **Vapour pressure (20°C):** no data available
- **Specific gravity:** no data available
- **Relative vapour density (air=1):** no data available

### 100 mL CAL stock solution

- **State of aggregation:** liquid
- **Colour:** colourless
- **Odor:** acetic
- **Melting point:** no data available
Safety Data Sheet
according to Regulations REACh 1907/2006/EC

REF: 931601
VISOCOLOR soil case, with accessories

Printing date: 04.04.2023
Date of issue: 26.01.2023
Version: 2.2.2.25

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 (o/w):
  no data available
o) Vapour pressure (20°C):
  no data available
p) Specific gravity:
  no data available
q) Relative vapour density (air=1):
  no data available
r) Particle size:
  no data available

100 Test strips
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 (o/w):
  no data available
o) Vapour pressure (20°C):
  no data available
p) Specific gravity:
  no data available
q) Relative vapour density (air=1):
  no data available
r) Particle size:
  no data available

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 (o/w): no data available
o) Vapour pressure (20°C): no data available
p) Specific gravity: no data available
q) Relative vapour density (air=1): no data available
r) Particle size: no data available

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 %

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
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 %

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 (o/w): no data available

o) Vapour pressure (20°C): no data available

p) Specific gravity: no data available

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

r) Particle size: no data available

30 mL P-K

a) State of aggregation: liquid

b) Colour: colourless

c) Odor: odourless

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 (o/w): no data available

o) Vapour pressure (20°C): no data available

p) Specific gravity: no data available

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

r) Particle size: no data available

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

m) Solubility in water: 0-100 %

n) Dispersion coefficient (o/w): no data available

o) Vapour pressure (20°C): no data available

p) Specific gravity: no data available

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

r) Particle size: no data available

500 mL dist. water

a) State of aggregation: liquid

b) Colour: colourless

c) Odor: odourless

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 (o/w): no data available

o) Vapour pressure (20°C): no data available

p) Specific gravity: 1,00 g/cm³
9.2 Other information
No data is available for the other parameters for the mixtures, since no registration and no chemical safety report is required.

Properties relevant to substance groups
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.

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 ini 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; stomatitis; 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
LD50 orl rat : 2140 mg/kg
LC50 ini 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 ≥1,0%/≥1,0%,
Korea Exist.Chem.Inventory: not listed
LD50 orl rat : 2000-5000 mg/kg
LD50 inh 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; pneumonia; eye, skin burns; temporary loss of hair
Australia NICNAS: not listed
Japan CSCL/PRTR: not listed, Japan PDSCL: not listed
Japan ISHL: listed ≥1,0%/≥1,0%, Article 57-2 (SDS required)
South Korea TCCA: not listed
Korea Exist.Chem.Inventory: KE-31487
LD50 orl rat : [40%] 1250 / [<25%] >2000 mg/kg
LD50 inh 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; pneumonia; eye, skin burns; temporary loss of hair
Australia NICNAS: not listed
Canada CEPA 1999: DSL Yes
Japan CSCL/PRTR: not listed, Japan PDSCL: not listed
Japan ISHL: listed ≥1,0%/≥1,0%, Article 57-2 (SDS required)
South Korea TCCA: not listed
Korea Exist.Chem.Inventory: KE-31487
LD50 orl rat : [40%] 1250 / [<25%] >2000 mg/kg
LD50 inh 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 ≥1,0%/≥1,0%, Article 57-2 (SDS required)
South Korea TCCA: not listed
Korea Exist.Chem.Inventory: KE-12701
LD50 orl rat : 1540 mg/kg

100 mL CAL stock solution
### Safety Data Sheet

**according to Regulations REACh 1907/2006/EC**

**REF:** 931601  
**VISOCOLOR soil case, with accessories**  
**Printing date:** 04.04.2023  
**Date of issue:** 26.01.2023  
**Version:** 2.2.2.25

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

#### Chemical: acetic acid
- **CAS No.:** 64-19-7

#### Chemical: PVC foil (CAS 9002-86-2)
- **CAS No.:** -

#### Chemical: cellulose paper
- **CAS No.:** 9004-34-6

#### Chemical: indicator dye(s)
- **CAS No.:** -

#### Chemical: cellulose paper
- **CAS No.:** 9004-34-6

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

---

**Exposure Routes:** inhalation, skin and/or eye contact  
**Target Organs:** Eyes, skin, respiratory system  
**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:** not listed

**South Korea TCCA:** not listed  
**Korea Exist.Chem.Inventory:** KE-00013

**LD50 orl rat:** 4280 mg/kg

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**Exposure Routes:** inhalation, skin and/or eye contact  
**Target Organs:** Eyes, skin, respiratory system  
**Symptoms:** irritation eyes, skin, nose, throat; eye, skin burns; skin sensitization; dental erosion; black skin, hyperkeratosis; conjunctivitis, lacrimation

**Australia NICNAS:** not listed  
**California Proposition 65 List:** not listed

**Japan CSCL/PRTR:** not listed, Japan PDSCL: not listed  
**Japan ISHL:** not listed

**South Korea TCCA:** not listed  
**Korea Exist.Chem.Inventory:** KE-00013

**LD50 orl rat:** 3310 mg/kg

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**Exposure Routes:** inhalation, skin and/or eye contact  
**Target Organs:** Eyes, skin, respiratory system  
**Symptoms:** irritation eyes, skin, nose, throat; eye, skin burns; skin sensitization; dental erosion; black skin, hyperkeratosis; conjunctivitis, lacrimation

**Australia NICNAS:** not listed  
**California Proposition 65 List:** not listed

**Japan CSCL/PRTR:** not listed, Japan PDSCL: not listed  
**Japan ISHL:** not listed

**South Korea TCCA:** not listed  
**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

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**Exposure Routes:** inhalation, skin and/or eye contact  
**Target Organs:** Eyes, skin, respiratory system  
**Symptoms:** irritation eyes, skin, nose, throat; eye, skin burns; skin sensitization; dental erosion; black skin, hyperkeratosis; conjunctivitis, lacrimation

**Australia NICNAS:** not listed  
**California Proposition 65 List:** not listed

**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

---

**Exposure Routes:** inhalation, skin and/or eye contact  
**Target Organs:** Eyes, skin, respiratory system  
**Symptoms:** irritation eyes, skin, nose, throat; eye, skin burns; skin sensitization; dental erosion; black skin, hyperkeratosis; conjunctivitis, lacrimation

**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:** > 5,800 mg/L/4H

---

**Exposure Routes:** inhalation, skin and/or eye contact  
**Target Organs:** Eyes, skin, respiratory system  
**Symptoms:** irritation eyes, skin, nose, throat; eye, skin burns; skin sensitization; dental erosion; black skin, hyperkeratosis; conjunctivitis, lacrimation

**Australia NICNAS:** not listed  
**California Proposition 65 List:** not listed

**Japan CSCL/PRTR:** not listed, Japan PDSCL: not listed  
**Japan ISHL:** not listed

**South Korea TCCA:** not listed  
**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

---

**Exposure Routes:** inhalation, skin and/or eye contact  
**Target Organs:** Eyes, skin, respiratory system  
**Symptoms:** irritation eyes, skin, nose, throat; eye, skin burns; skin sensitization; dental erosion; black skin, hyperkeratosis; conjunctivitis, lacrimation

**Australia NICNAS:** not listed  
**California Proposition 65 List:** not listed

**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:** > 5,800 mg/L/4H

---

**Exposure Routes:** inhalation, skin and/or eye contact  
**Target Organs:** Eyes, skin, respiratory system  
**Symptoms:** irritation eyes, skin, nose, throat; eye, skin burns; skin sensitization; dental erosion; black skin, hyperkeratosis; conjunctivitis, lacrimation

**Australia NICNAS:** not listed  
**California Proposition 65 List:** not listed

**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

---

**Exposure Routes:** inhalation, skin and/or eye contact  
**Target Organs:** Eyes, skin, respiratory system  
**Symptoms:** irritation eyes, skin, nose, throat; eye, skin burns; skin sensitization; dental erosion; black skin, hyperkeratosis; conjunctivitis, lacrimation

**Australia NICNAS:** not listed  
**California Proposition 65 List:** not listed

**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:** > 5,800 mg/L/4H

---

**Exposure Routes:** inhalation, skin and/or eye contact  
**Target Organs:** Eyes, skin, respiratory system  
**Symptoms:** irritation eyes, skin, nose, throat; eye, skin burns; skin sensitization; dental erosion; black skin, hyperkeratosis; conjunctivitis, lacrimation

**Australia NICNAS:** not listed  
**California Proposition 65 List:** not listed

**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

---

**Exposure Routes:** inhalation, skin and/or eye contact  
**Target Organs:** Eyes, skin, respiratory system  
**Symptoms:** irritation eyes, skin, nose, throat; eye, skin burns; skin sensitization; dental erosion; black skin, hyperkeratosis; conjunctivitis, lacrimation

**Australia NICNAS:** not listed  
**California Proposition 65 List:** not listed

**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:** > 5,800 mg/L/4H

---

**Exposure Routes:** inhalation, skin and/or eye contact  
**Target Organs:** Eyes, skin, respiratory system  
**Symptoms:** irritation eyes, skin, nose, throat; eye, skin burns; skin sensitization; dental erosion; black skin, hyperkeratosis; conjunctivitis, lacrimation

**Australia NICNAS:** not listed  
**California Proposition 65 List:** not listed

**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

---

**Exposure Routes:** inhalation, skin and/or eye contact  
**Target Organs:** Eyes, skin, respiratory system  
**Symptoms:** irritation eyes, skin, nose, throat; eye, skin burns; skin sensitization; dental erosion; black skin, hyperkeratosis; conjunctivitis, lacrimation

**Australia NICNAS:** not listed  
**California Proposition 65 List:** not listed

**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:** > 5,800 mg/L/4H

---

**Chemical: chemicals/mixture until 1%**  
- **CAS No.:** -  
- **TSCA Inventory:** all listed, <1%  
- **Korea Exist.Chem.Inventory:** listed
100 Test sticks Ammonium

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

Chemical: cellulose paper
TSCA Inventory: 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
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 inh rat : > 5,800 mg/L/4H

25 mL pH 4-10

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

Chemical: ethanol
TSCA Inventory: listed
AGIH: 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 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
LC50 inh gpg : 21,900 mg/L
LC50 inh mm : 1400 mg/kg
LC50 inh mus : 123,4 mg/L/4H
LC50 inh 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)
TSCA Inventory: listed
Australia NICNAS: not listed
Japan CSCL/PRTR: PRTR - Class II Designated Chemical Substance, Japan PDSCL: 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
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  
TSCA Inventory: all listed  
Korea Exist.Chem.Inventory: listed

30 mL P-K  
Chemical: sulfuric acid  
TSCA Inventory: listed  
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; stomatitis; dental erosion; eye, skin burns; dermatitis  
Australia NICNAS: not listed  
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-00013

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  
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 : 2140 mg/kg
LC50 inh mus : 0,85 mg/L/4H
TRGS 905 (DE): Kat 4

1 L CAL solution  
Chemical: acetic acid  
TSCA Inventory: 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
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

500 mL dist. water  
Chemical: water  
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  
Chemical: cellulose paper  
Water hazard class (DE): nwg  
Storage class (VCI): 11
### 30 mL P-1
**Chemical:** sulfuric acid  
**CAS No.:** 7664-93-9  
**Avoid contact of substance/mixture to environment.**  
**PNEC (fresh water):** 2.5 µg/L  
**LC50 daphnia/48h:** [NOEC, 65d] 25 µg/L  
**EC50 daphnia/48h:** 100 mg/L  
**IC50 pseudomonas putida/16h:** [72h] 100 mg/L  
**Water hazard class (DE):** 1  
**WGK No.:** 0182  
**Storage class (VCI):** 8 B

**Chemical:** ammonium heptamolybdate  
**CAS No.:** 12054-85-2  
**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  
**IC50 scenedesmus quadricauda/72h:** 48 mg/L  
**Water hazard class (DE):** 1  
**WGK No.:** 0637  
**Storage class (VCI):** 12-13

### 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

### 25 mL K-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.:** 1169  
**Storage class (VCI):** 8 B

### 100 mL CaCl₂ stock solution
**Chemical:** calcium chloride (dihydrate)  
**CAS No.:** 10035-04-8  
**LC50 daphnia magna/48h:** 3005 mg/L  
**LC50 fish/96h:** 10.65 g/L  
**IC50 scenedesmus quadricauda/72h:** 3130 mg/L  
**Water hazard class (DE):** 1  
**WGK No.:** 0220  
**Storage class (VCI):** 12-13

### 30 mL P-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.:** 0093  
**Storage class (VCI):** 8 B

### 100 mL CAL stock solution
**Chemical:** calcium acetate  
**CAS No.:** 62-54-4  
**Water hazard class (DE):** 1  
**Storage class (VCI):** 12-13

**Chemical:** acetic acid  
**CAS No.:** 64-19-7  
**PNEC (fresh water):** 3.058 mg/L  
**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  
**Dispersion coefficient (o/w):** -0.17  
**Storage class (VCI):** 8 B
100 Indicator sticks
Chemical: PVC foil (CAS 9002-86-2)  CAS No.: -
Chemical: indicator dye(s)  CAS No.: -
Storage class (VCI): 12-13

Chemical: cellulose paper  CAS No.: 9004-34-6
Water hazard class (DE): nwg
Storage class (VCI): 11

100 test strips
Chemical: PVC foil (CAS 9002-86-2)  CAS No.: -
Chemical: cellulose paper  CAS No.: 9004-34-6
Water hazard class (DE): nwg
Storage class (VCI): 11

Chemical: chemicals/mixture until 1%  CAS No.: -
Water hazard class (DE): 1
Storage class (VCI): 12-13

25 mL pH 4-10
Chemical: indicator dye(s)  CAS No.: -
Storage class (VCI): 12-13

Chemical: ethanol  CAS No.: 64-17-5
PNEC (fresh water): 0.96 mg/L

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 (o/w): 0.31
Storage class (VCI): 3

Chemical: phenolphthalein (pH indicator)  CAS No.: 77-09-8
Water hazard class (DE): 1
Dispersion coefficient (o/w): 0.9
Storage class (VCI): 12-13

12 g K-2
Chemical: sodium tetraphenylborate  CAS No.: 143-66-8
Water hazard class (DE): 3
Storage class (VCI): 12-13

30 mL Pyrophosphate solution
Chemical: phosphate buffer solution  CAS No.: -
Water hazard class (DE): 1
Storage class (VCI): 12

30 mL P-K
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 Effected Concentration
LC50 fish/96h: [NOEC, 65d] 25 µg/L
EC50 daphnia/48h: 100 mg/L
EC10 pseudomonas putita/16h: [72h] 100 mg/L
Water hazard class (DE): 1  WGK No.: 0182
Storage class (VCI): 8 B

1 L CAL solution
Chemical: acetic acid  CAS No.: 64-19-7
PNEC (fresh water): 3.058 mg/L
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
Dispersion coefficient (o/w): -0.17
Storage class (VCI): 8 B

500 mL dist. water
Chemical: water  CAS No.: 7732-18-5

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

12.6 Endocrine disrupting properties
no data available

12.7 Other adverse effects
no additional data available

SECTION 13: Disposal considerations
Please observe local regulations for collection and disposal of hazardous waste and contact waste disposal company, where you will obtain information on laboratory waste disposal (waste code number 16 05 06).

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

SECTION 14: Transport information

14.1. UN number: 3316
14.2. UN proper shipping name: Chemical Kit
14.3. Class: 9  14.4. Packing group: II
Road transport ADR
Classification code: M11  Tunnel restriction code: E
Limited Quantity: acc. ADR 3.3.1/251: see LQ in Alternative declaration for transportation

Air transport ICAO
PAX: 960  max. weight PAX: 10 KG
CAO: 960  max. weight CAO: 10 KG

Maritime transport IMDG
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/≤500 mL) = ADR/ IATA E2 or
### 14.1 UN number: 1993
### 14.2 UN proper shipping name: Flammable liquid, n.o.s. (ethanol mixture)
### 14.3 Class: 3
### 14.4 Packing group: II

**Road transport ADR**

- **Classification code:** F1
- **Limited Quantity:** 1 L
- **Tunnel restriction code:** E
- **Excepted Quantity:** E 2
- **Special instructions:** 640C

**Air transport ICAO**

- **Limited Quantity:** LQ 4
- **PAX:** 353
- **max. weight PAX:** 5 L
- **CAO:** 364
- **max. weight CAO:** 60 L

**Maritime transport IMDG**

- **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. (sodium disulfite, sulfuric acid solution)
### 14.3 Class: 8
### 14.4 Packing group: II

**Road transport ADR**

- **Classification code:** C1
- **Limited Quantity:** 1 L
- **Tunnel restriction code:** E
- **Excepted Quantity:** E 2
- **PAX:** 851
- **max. weight PAX:** 1 L
- **CAO:** 855
- **max. weight CAO:** 30 L

**Air transport ICAO**

- **Limited Quantity:** LQ 22
- **PAX:** 851
- **max. weight PAX:** 1 L
- **CAO:** 855
- **max. weight CAO:** 30 L

**Maritime transport IMDG**

- **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 ADR**

- **Classification code:** C5
- **Limited Quantity:** 1 L
- **Tunnel restriction code:** E
- **Excepted Quantity:** E 2
- **PAX:** 851
- **max. weight PAX:** 1 L
- **CAO:** 855
- **max. weight CAO:** 30 L

**Air transport ICAO**

- **Limited Quantity:** LQ 22
- **PAX:** 851
- **max. weight PAX:** 1 L
- **CAO:** 855
- **max. weight CAO:** 30 L

**Maritime transport IMDG**

- **EmS:** F-A, S-B
- **Storage category:** B

### 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
Safety Data Sheet
according to Regulations REACh 1907/2006/EC

Chapter 4, Measures when storing hazardous substances up to 50 kg (small quantity regulation)
Wasserhaushaltsgesetz - WHG, Section 3 Handling substances hazardous to water, Jul 2009, status: Aug 2016
MN leaflet/instructions for use, also at www.mn-net.com
If necessary, observe other country-specific regulations.

15.2 Chemical safety assessment
not necessary for these small amounts

SECTION 16: Other information

16.1 Changes compared to the last version
Between versions 2.2.2.25 and 2.2.2.2 following changes were applied: - 23 substance data corrected

16.2 List of H and P phrases

16.2.1 List of relevant H phrases
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.
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.

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/EG 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)

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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Further information

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Legend / Abbreviations

acc: according
ADR: Convention concerning the International Carriage of Dangerous Goods by Road
Ac: acute
BAT: biological workplace tolerance value
CAO: Cargo Aircraft Only
Carc: carcinogenic
CAS: Chemical Abstracts Service
CLP: Classification, Labelling and Packaging regulation
CMR: carcinogen, mutagen, reproduction toxic
Cor: 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
ih: inhaled
IMDG: International Maritime Dangerous Goods Code
intrav: intravenous
ipt: intraperitoneal
ISHL: Industrial Safety and Health Law (Jp)
LC50: lethal concentration 50%
LD50: lethal dose 50%
leuciscus idus: fisch, ide, orfe
MAK: maximum workplace concentration
Met: Metall
mus: mouse
Muta: mutagen
NIOSH: National Institute for Occupational Safety and Health (US)
NRD: Non-rapidly degradable
onchorynchus mykiss: fish, rainbow trout
ori: 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 Effected 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
rab: rabbit
RD: rapidly degradable
RE: repeated
REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals
REF: item number, reference number
Reg.No.: rRegistration number
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.