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

REF: 933200  
Printing date: 04.04.2023  
Version: 2.2.4.11  

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

1.1 Product identifier  
REF 933200  
Product name VISOCOLOR School reagent case Refill set  

REACH Registration number(s): see SECTION 3.1/3.2 or  
A registration number for the substance(s) does not exist because the annual tonnage does not require registration or the substance or its use is excluded from registration.  

- 1 x 30 mL NH\textsubscript{4} \textsuperscript{+}  
- 1 x 2.5 g NH\textsubscript{4} \textsuperscript{+}  
- 1 x 10 mL NH\textsubscript{4} \textsuperscript{-}  
- 1 x 8 mL GH-1  
- 1 x 30 mL GH-2  
- 1 x 30 mL NO\textsubscript{3} ^{-}  
- 1 x 5 g NO\textsubscript{3} ^{-}  
- 1 x 30 mL NO\textsubscript{2} ^{-}  
- 1 x 5 g NO\textsubscript{2} ^{-}  
- 1 x 24 mL pH-1  
- 1 x 25 mL PO\textsubscript{4} ^{-}  
- 1 x 25 mL PO\textsubscript{4} ^{-}  

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  
Valenciener 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)  
90089 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  GHS09  

Hazard identification Hazard classes/categories  
H225 Flam. Liq. 2  
H290 Met. Corr. 1  
H314 Skin Corr. 1B  
H411 Aquatic Chronic 2  
EUH031 031 not defined
2.1 Classification of the substance or mixture according to Regulation (EC) 1272/2008

8 mL GH-1

- GHS02
- GHS07

Signal word: WARNING

<table>
<thead>
<tr>
<th>Hazard identification</th>
<th>Hazard classes/categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>H226</td>
<td>Flam. Liq. 3</td>
</tr>
<tr>
<td>H315</td>
<td>Skin Irrit. 2</td>
</tr>
<tr>
<td>H319</td>
<td>Eye Irrit. 2</td>
</tr>
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</table>

25 mL PO 4 -1

- GHS07

Signal word: WARNING

<table>
<thead>
<tr>
<th>Hazard identification</th>
<th>Hazard classes/categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>H315</td>
<td>Skin Irrit. 2</td>
</tr>
<tr>
<td>H319</td>
<td>Eye Irrit. 2</td>
</tr>
</tbody>
</table>

30 mL NH 4 -1

- GHS05

Signal word: DANGER

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

30 mL GH-2

- Do not need labelling as hazardous

Signal word: -

No hazard class

10 mL NH 4 -3

- GHS02
- GHS05

Signal word: DANGER

<table>
<thead>
<tr>
<th>Hazard identification</th>
<th>Hazard classes/categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>H226</td>
<td>Flam. Liq. 3</td>
</tr>
<tr>
<td>H314</td>
<td>Skin Corr. 1B</td>
</tr>
<tr>
<td>H412</td>
<td>Aquatic Chronic 3</td>
</tr>
</tbody>
</table>
5 g NO₂⁻2

Signal word
- Do not need labelling as hazardous

No hazard class

2.5 g NH₄⁺⁻₂

Signal word
- Do not need labelling as hazardous

No hazard class

24 mL pH-1

GHS02

Signal word
DANGER

Hazard identification
H225
Hazard classes/categories
Flam. Liq. 2

30 mL NO₃⁻¹

Signal word
- Do not need labelling as hazardous

No hazard class

30 mL NO₂⁻¹

GHS05

Signal word
DANGER

Hazard identification
H290
Hazard classes/categories
Met. Corr. 1

5 g NO₃⁻²

GHS09

Signal word
NONE

Hazard identification
H411
Hazard classes/categories
Aquatic Chronic 2

25 mL PO₄⁻²
2.2 Label elements according regulation (EC) 1272/2008

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

8 mL GH-1

Signal word: WARNING

25 mL PO -1

Signal word: WARNING

30 mL NH -1

Signal word: DANGER

30 mL GH-2

Do not need labelling as hazardous

Signal word: -

10 mL NH -3

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.

5 g NO₂ -2
Do not need labelling as hazardous
Signal word: -

2,5 g NH₄ -2
Do not need labelling as hazardous
Signal word: -

24 mL pH-1

GHS02
Signal word: DANGER

30 mL NO₃ -1
Do not need labelling as hazardous
Signal word: -

30 mL NO₂ -1

GHS05
Signal word: DANGER

5 g NO₃ -2

GHS09
Signal word: NONE

25 mL PO₄ -2

GHS05
Signal word: DANGER

H318
Causes serious eye damage.
P280sh, P305+351+338, P310
Wear protective gloves/eye protection. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.

Label elements of the complete product

GHS02 GHS05 GHS09
SECTION 3: Composition / information on ingredients

3.1 Substances or 3.2 Mixtures

8 mL GH-1

<table>
<thead>
<tr>
<th>Substance name</th>
<th>CAS No.</th>
<th>Substance rating</th>
<th>Formula</th>
<th>Pseudonym (de)</th>
<th>REACH Reg. No.</th>
<th>Dual-use</th>
</tr>
</thead>
<tbody>
<tr>
<td>triethanolamine</td>
<td>102-71-6</td>
<td>H315, Skin Irrit. 2, H319, Eye Irrit. 2</td>
<td>C₆H₁₂NO₃</td>
<td>2,2’-2’-Nitroletriethanol, TEA, Tris(2-hydroxyethyl)amin</td>
<td>01-2119486482-31-xxxx</td>
<td>The application of this chemical is exempt from the regulation 2017/2268/EU (see IC350 remark 4).</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ethanol</td>
<td>64-17-5</td>
<td>H225, Flam. Liq. 2</td>
<td>C₂H₆O</td>
<td>Äthyalkohol, vergällter Spiritus</td>
<td>01-2119457610-43-xxxx</td>
<td>Indice No.: 603-002-00-5</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>200-578-6</td>
<td></td>
</tr>
<tr>
<td>indicator dye(s)</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Signal word: DANGER
H314
Causes severe skin burns and eye damage.
P260 sh, P280 sh, P303+361+533, 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. H290 "May be corrosive to metals." has only relevance for higher concentrations and larger amounts. The labelling GHS05 would be creating an "OVERLABELLING" (see GHS Directive 1272/2006/EC Annex I, chapter 1.5.2.1.3., until 125 mL no labelling necessary).

Information pertaining to particular risks to human and possible symptoms
Causes varying degrees of acid burns on the skin, to the eyes and to the mucous membranes and wounds which do not heal quickly depending on the concentration, temperature and the exposure time. Vapours especially which steam from hot liquids and mist can have a severe irritant effect upon the eyes and the respiratory organs.

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

REF: 933200
Visocolor School Reagent Case Refill Set

Printing date: 04.04.2023
Date of issue: 26.01.2023
Version: 2.2.4.11

2,5 g NH₄ -2

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

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

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

25 mL PO₄ -2

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

Substance rating: H302, Acute Tox. 4 oral, H318, Eye Dam. 1, EUH031, 031 not defined

Formula: Na₂O₅S₂
Pseudonym (de): Disulfit
REACH Reg. No.: 01-2119531326-45-xxxx
EC No.: 220-767-7
Indice No.: 613-030-01-7
Concentration: 3 - <10 %
acc. CLP (GHS): The criteria for classification are not fulfilled.

10 mL NH₄ -3

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

Substance rating: H302, Acute Tox. 4 oral, H314, Skin Corr. 1B, H411, Aquatic Chronic 2

Formula: C₁₀H₁₄O
Pseudonym (de): 1-Methyl-3-hydroxy-4-isopropylbenzol
REACH Reg. No.: 01-2119511177-46-xxxx
EC No.: 201-944-8
Indice No.: 604-032-00-1
Concentration: 5 - <10 %
acc. CLP (GHS): H314, Skin Corr. 1B, H412, Aquatic Chronic 3

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

Substance rating: H301, Acute Tox. 3 oral

Formula: Na₂[Fe(CN)₅NO] · 2 H₂O
Pseudonym (de): Natriumpentacyanonitrosylferrat(II)
EC No.: 236-373-9
Concentration: 1 - <5 %
acc. CLP (GHS): The criteria for classification are not fulfilled.
## Safety Data Sheet
according to Regulations REACh 1907/2006/EC

<table>
<thead>
<tr>
<th>Substance name:</th>
<th>ethanol</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS No.:</td>
<td>64-17-5</td>
</tr>
<tr>
<td>Substance rating:</td>
<td>H225, Flam. Liq. 2</td>
</tr>
<tr>
<td>Formula:</td>
<td>C₂H₅OH; C₂H₆O</td>
</tr>
<tr>
<td>Pseudonym (de):</td>
<td>Äthylalkohol, vergällter Spiritus</td>
</tr>
<tr>
<td>REACH Reg. No.:</td>
<td>01-2119457610-43-xxxx</td>
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<tr>
<td>EC No.:</td>
<td>200-578-6</td>
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<tr>
<td>Concentration:</td>
<td>35 - 65 % acc.</td>
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<table>
<thead>
<tr>
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<th>zinc powder (stabilized)</th>
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</thead>
<tbody>
<tr>
<td>CAS No.:</td>
<td>7440-66-6</td>
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<tr>
<td>Substance rating:</td>
<td>H410, Aquatic Chronic 1</td>
</tr>
<tr>
<td>Formula:</td>
<td>Zn</td>
</tr>
<tr>
<td>REACH Reg. No.:</td>
<td>01-2119467174-37-xxxx</td>
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<td>EC No.:</td>
<td>231-175-3</td>
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<tr>
<td>Concentration:</td>
<td>2.5 - &lt;10 % acc.</td>
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<tr>
<td>acc. CLP (GHS):</td>
<td>H411, Aquatic Chronic 2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Substance name:</th>
<th>citric acid</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS No.:</td>
<td>77-92-9</td>
</tr>
<tr>
<td>Substance rating:</td>
<td>H319, Eye Irrit. 2, H335, STOT SE 3</td>
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<tr>
<td>Formula:</td>
<td>C₆H₈O₇</td>
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<tr>
<td>Pseudonym (de):</td>
<td>Zitronensäure</td>
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<tr>
<td>Concentration:</td>
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<tr>
<td>acc. CLP (GHS):</td>
<td>The criteria for classification are not fulfilled.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Substance name:</th>
<th>citric acid</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS No.:</td>
<td>77-92-9</td>
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<tr>
<td>Substance rating:</td>
<td>H319, Eye Irrit. 2, H335, STOT SE 3</td>
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<tr>
<td>Formula:</td>
<td>C₆H₈O₇</td>
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<tr>
<td>Pseudonym (de):</td>
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<td>EC No.:</td>
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<tr>
<td>Concentration:</td>
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</tbody>
</table>

<table>
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<tr>
<th>Substance name:</th>
<th>N-(1-naphthyl)-ethylenediamine dihydrochloride</th>
</tr>
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<tbody>
<tr>
<td>CAS No.:</td>
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<tr>
<td>Substance rating:</td>
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<td>Formula:</td>
<td>C₁₂H₁₈Cl₂N₂</td>
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<td>EC No.:</td>
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</tbody>
</table>

24 mL pH-1
Safety Data Sheet
according to Regulations REACh 1907/2006/EC

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: ethanol
CAS No.: 64-17-5 (denatured with 1% 2-butanone / 1% 2-propanol)
Substance rating: H225, Flam. Liq. 2
Formula: C\textsubscript{2}H\textsubscript{6}O; C\textsubscript{2}H\textsubscript{5}OH
Pseudonym (de): Äthyalkohol, 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: phenolphthalein (pH indicator)
CAS No.: 77-09-8
Substance rating: H341, Mut. 2, H350, Carc. 1B, H361f, Repr. 2
Formula: C\textsubscript{20}H\textsubscript{14}O\textsubscript{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: 0,01 - <0,1 % acc. CLP (GHS): The criteria for classification are not fulfilled.

30 mL NO \textsubscript{2} -1
Substance name: sulfanilamide
CAS No.: 63-74-1
Substance rating: No criteria for classification or naming of chemical not required.
Formula: C\textsubscript{6}H\textsubscript{8}N\textsubscript{2}O\textsubscript{2}S
Pseudonym (de): 4-Aminobenzolsulfonamid
EC No.: 200-563-4
Concentration: 1 - <10 % acc. CLP (GHS): The criteria for classification are not fulfilled.

Substance name: o-phosphoric acid
CAS No.: 7664-58-2
Formula: H\textsubscript{3}PO\textsubscript{4} + H\textsubscript{2}O
Pseudonym (de): Orthophosphorsäure, E338
REACH Reg. No.: 01-2119485924-24-xxxx
EC No.: 231-633-2 Indice No.: 015-011-00-6
Concentration: 1 - <10 % acc. CLP (GHS): H290, Met. Corr. 1

30 mL NH\textsubscript{4} -1
Safety Data Sheet
according to Regulations REACh 1907/2006/EC

REF: 933200
Printing date: 04.04.2023
Date of issue: 26.01.2023
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Substance name: sodium hydroxide solution
CAS No.: 1310-73-2
Substance rating: H314, Skin Corr. 1B
Formula: NaOH•H₂O
Pseudonym (de): Natronlauge
REACH Reg. No.: 01-2119457892-27-xxxx
EC No.: 215-185-5
Concentration: 5 - <10 %
acc. CLP (GHS): H314, Skin Corr. 1B

Substance name: tri-sodium citrate
CAS No.: 6132-04-3
Substance rating: No criteria for classification or naming of chemical not required.
Formula: C₆H₅Na₃O₇•2H₂O
Pseudonym (de): Na-citrat, E331
REACH Reg. No.: 01-2119457027-40-xxxx
EC No.: 200-675-3
Concentration: 10 - <20 %
acc. CLP (GHS): The criteria for classification are not fulfilled.

25 mL PO₄⁻₁
Substance name: sulfuric acid
CAS No.: 7664-93-9
Substance rating: H315, Skin Irrit. 2, H319, Eye Irrit. 2
Formula: H₂SO₄•H₂O
REACH Reg. No.: 01-2119458838-20-xxxx
EC No.: 231-639-5
Concentration: 5 - <15 %
acc. CLP (GHS): H315, Skin Irrit. 2, H319, Eye Irrit. 2

Substance name: ammonium heptamolybdate
CAS No.: 12054-85-2
Substance rating: No criteria for classification or naming of chemical not required.
Formula: H₂₄Mo₇N₆O₂₄
Pseudonym (de): Ammoniummolybdat
REACH Reg. No.: 01-2119498057-28-xxxx
EC No.: 234-722-4
Concentration: 0,5 - <2 %
Correlation factor: x 0.58 (= %Mo)
The classification refers to the weight percentage of the metal (according to CLP regulation 2008/1272/EG Annex VI, 1.1.3.2 Note 1)
acc. CLP (GHS): The criteria for classification are not fulfilled.

30 mL GH-2
Substance name: ethylenedinitrilo tetraacetic acid, di Na-salt (EDTA-Na)
CAS No.: 6381-92-6
Substance rating: H332, Acute Tox. 4 inh., H373, STOT SE 3
Formula: C₁₀H₁₄N₂Na₂O₈•2H₂O
Pseudonym (de): Titriplex® III
EC No.: 205-358-3
Concentration: 0,1 - <1 %
acc. CLP (GHS): The criteria for classification are not fulfilled.
3.3 Remarks

When not listed, mixtures are added with water [CAS No. 7732-18-5] to 100%. List of H and P phrases: see section 16.2.

SECTION 4: First aid measures

4.1 Description of first aid measures

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

4.1.1 After SKIN Contact

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

4.1.2 After EYE Contact

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

4.1.3 After INHALATION of vapours

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

4.1.4 After ORAL Intake

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

4.2 Most important symptoms and effects, both acute and delayed

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

4.3 Indication of any immediate medical attention and special treatment needed

CORROSIVE DAMAGE: After SKIN CONTACT rinse with water for a long time. Efforts to neutralise the substance can frequently make matters worse. Apply 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 INTAKE administer aluminium oxide drug suspensions. Administer a prophylaxis to counter pulmonary oedema following the INGESTION of corrosive aerosols. In the event of RESPIRATORY DISTREES ensure that the patient inhaled 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. Retain 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.

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. 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

<table>
<thead>
<tr>
<th>Chemical</th>
<th>CAS No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>triethanolamine</td>
<td>102-71-6</td>
</tr>
<tr>
<td>ethanol</td>
<td>64-17-5</td>
</tr>
</tbody>
</table>

8 mL GH-1

DNEL = Derived No-Effect Level (for workers)

Chemical: triethanolamine

CAS No.: 102-71-6

DNEL = [derm] 6.3; [inh] 5 mg/m³

PNEC (fresh water): 0.32 mg/L

TRGS 900 (DE): - DFG: 5 mg/m⁴

Ere respirable

Short-term exposure factor: I, (2)

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

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

NIOSH: not listed

Osha: not listed

Chemical: ethanol

CAS No.: 64-17-5

DNEL = Derived No-Effect Level (for workers)

Chemical: triethanolamine

CAS No.: 102-71-6

DNEL = [derm] 6.3; [inh] 5 mg/m³

PNEC (fresh water): 0.32 mg/L

TRGS 900 (DE): - DFG: 5 mg/m⁴

Ere respirable

Short-term exposure factor: I, (2)

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

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

NIOSH: not listed

Osha: not listed
Safety Data Sheet according to Regulations REACh 1907/2006/EC

REF: 933200  VISOCOLOR School reagent case Refill set  Page: 13/31
Printing date: 04.04.2023  Date of issue: 26.01.2023  Version: 2.2.4.11

PNEC = Predicted No Effected 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
OSHA: [TWA] 1000 ppm / 1900 mg/m³

Chemical: indicator dye(s)  CAS No.: -
2.5 g NH₄Cl -2
Chemical: sodium chloride  CAS No.: 7647-14-5
Chemical: dichloroisocyanuric acid, Na salt  CAS No.: 2893-78-9

SUVA(CH) MAK value: 500 ppm / 960 mg/m³
NIOSH: [TWA] 5 mg/m³
OSHA: not listed

25 mL PO₄ -2
Chemical: sodium disulfite  CAS No.: 7681-57-4

DNEL: [inh] 225 mg/m³
TRGS 900 (DE): -
SUVA(CH) MAK value: 5 mg/m³
NIOSH: [TWA] 5 mg/m³
OSHA: not listed

Chemical: thymol  CAS No.: 89-83-8
Chemical: sodium nitroprusside  CAS No.: 13755-38-9
Chemical: ethanol  CAS No.: 64-17-5

DNEL: [derm] 343 mg/kg; [inh] 950 mg/m³
PNEC (fresh water): 0.96 mg/L
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 rpm / 1900 mg/m³
OSHA: [TWA] 1000 ppm / 1900 mg/m³

5 g NO₃ -2
Chemical: zinc powder (stabilized)  CAS No.: 7440-66-6

TNEL: [inh] 1 mg/m³
TRGS 900 (DE): 0.1A / 2E mg/m³
E/e respirable

Chemical: citric acid  CAS No.: 77-92-9

PNEC (fresh water): 1440 mg/L
TRGS 900 (DE): 2 E mg/m³
E/e respirable
Short-term exposure factor: 2 (I) Y
Skin resorptive (H), respiratory sensitizable (Sa), skin sensitizable (Sh), teratogenic (Z) not securely excluded / (Y) certainly excluded

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E-mail: info@mn-net.com
www.mn-net.com

published: M2 V 6.1.1.5
Safety Data Sheet
according to Regulations REACh 1907/2006/EC

REF: 933200
VISOCOLOR School reagent case Refill set
Printing date: 04.04.2023
Date of issue: 26.01.2023
Version: 2.2.4.11

5 g NO₂ -2
Chemical: citric acid
CAS No.: 77-92-9
PNEC (fresh water): 440 mg/L
PNEC = Predicted No Effected Concentration
TRGS 900 (DE): 2 E mg/m³
E/e respirable
Short-term exposure factor: 2 (I) Y
skin resorptive (H), respiratory sensitizable (Sa), skin sensitizable (Sh), teratogenic (Z) not securely excluded / (Y) certainly excluded

24 mL pH-1
Chemical: indicator dye(s)
CAS No.: -

24 mL NH₄ -1
Chemical: sodium hydroxide solution
CAS No.: 1310-73-2

30 mL NO₂ -1
Chemical: sulfanilamide
CAS No.: 63-74-1

30 mL NH₄ -1
Chemical: tri-sodium citrate
CAS No.: 6132-04-3
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

25 ml PO₄ -1

Chemical: sulfonic acid

DNEL: 50 µg/m³

PNEC (fresh water): 2.5 µg/L

TRGS 900 (DE): 0.1 E mg/m³

Short-term exposure factor: 1 (l)

Chemical: ammonium heptamolybdate

TRGS 900 (DE): [Mo] 5 E mg/m³

SUVA(CH) MAK value: [Mo] 5 e mg/m³

30 ml GH-2

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

DNEL: [inh] 1.5 mg/m³

PNEC (fresh water): 2.2 mg/L

Chemical: ammonia solution

DNEL: [inh] 14 mg/m³

PNEC (fresh water): 0.0011 mg/L

EU value: 20 ppm / 14 mg/m³

TRGS 900 (DE): 20 ppm / 14 mg/m³

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

Chemical: ammonium heptamolybdate

TRGS 900 (DE): [Mo] 5 E mg/m³

SUVA(CH) MAK value: [Mo] 5 e mg/m³

NIOSH: [TWA] 25 ppm / 18 mg/m³

NIOSH STEL: 35 ppm / 27 mg/m³

OSHA: Yes (TQ = 15000 lbs) - n/a; [TWA] 50 ppm / 35 mg/m³
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

8 mL GH-1
a) State of aggregation: liquid
b) Colour: green
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: 27 °C
i) Flashing temperature: no data available
j) Decomposition temperature: no data available
k) pH value: 10
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

2.5 g NH₄²⁻

a) State of aggregation: powder (solid)
b) Colour: colourless
c) Odor: chloric
d) Melting point: no data available
e) Boiling point: no data available
f) Flammability: no data available
g) Explosive limits (lower / upper): no data available
h) Flash point: no data available
i) Flashing temperature: no data available
j) Decomposition temperature: no data available
k) pH value: 5-7
l) Kinematic viscosity: no data available
m) Solubility in water: no data available
n) Dispersion coefficient (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 PO₄²⁻

a) State of aggregation: liquid
b) Colour: colourless
c) Odor: sulfuric
d) Melting point: no data available
e) Boiling point: no data available
f) Flammability: no data available
g) Explosive limits (lower / upper): no data available
h) Flash point: no data available
i) Flashing temperature: no data available
j) Decomposition temperature: no data available
k) pH value: 6-7
l) Kinematic viscosity: no data available
m) Solubility in water: no data available
n) Dispersion coefficient (o/w): no data available
o) Vapour pressure (20°C): no data available
p) Specific gravity: no data available
q) Relative vapour density (air=1): no data available
r) Particle size: no data available
10 mL NH₄⁺-3
a) State of aggregation: liquid
b) Colour: rose
c) Odor: organic
d) Melting point: no data available
e) Boiling point: no data available
f) Flammability: no data available
g) Explosive limits (lower / upper): no data available
h) Flash point: 23 °C
i) Flashing temperature: no data available
j) Decomposition temperature: no data available
k) pH value: 6-8
l) Kinematic viscosity: no data available
m) Solubility in water: no data available
n) Dispersion coefficient (o/w) : no data available
o) Vapour pressure (20°C): no data available
p) Specific gravity: 0.9 g/cm³
q) Relative vapour density (air=1) : no data available
r) Particle size: no data available

5 g NO₃⁻-2
a) State of aggregation: powder (solid)
b) Colour: slightly grey
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: 6.5-7.5
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

30 mL NO₃⁻-1
a) State of aggregation: liquid
b) Colour: rose
c) Odor: odorless
d) Melting point: no data available
e) Boiling point: no data available
f) Flammability: no data available
g) Explosive limits (lower / upper): no data available
h) Flash point: no data available
i) Flashing temperature: no data available
j) Decomposition temperature: no data available
k) pH value: 2-3
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
### 5 g NO₂ -2

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>State of aggregation</td>
<td>powder (solid)</td>
</tr>
<tr>
<td>Colour</td>
<td>colourless</td>
</tr>
<tr>
<td>Odor</td>
<td>odorless</td>
</tr>
<tr>
<td>Melting point</td>
<td>no data available</td>
</tr>
<tr>
<td>Boiling point</td>
<td>no data available</td>
</tr>
<tr>
<td>Flammability</td>
<td>no data available</td>
</tr>
<tr>
<td>Explosive limits (lower / upper)</td>
<td>no data available</td>
</tr>
<tr>
<td>Flash point</td>
<td>no data available</td>
</tr>
<tr>
<td>Flashing temperature</td>
<td>no data available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>no data available</td>
</tr>
<tr>
<td>pH value</td>
<td>2-3</td>
</tr>
<tr>
<td>Kinematic viscosity</td>
<td>no data available</td>
</tr>
<tr>
<td>Solubility in water</td>
<td>no data available</td>
</tr>
<tr>
<td>Dispersion coefficient (o/w)</td>
<td>no data available</td>
</tr>
<tr>
<td>Vapour pressure (20°C)</td>
<td>no data available</td>
</tr>
<tr>
<td>Specific gravity</td>
<td>no data available</td>
</tr>
<tr>
<td>Relative vapour density (air=1)</td>
<td>no data available</td>
</tr>
<tr>
<td>Particle size</td>
<td>no data available</td>
</tr>
</tbody>
</table>

### 24 mL pH-1

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>State of aggregation</td>
<td>liquid</td>
</tr>
<tr>
<td>Colour</td>
<td>red</td>
</tr>
<tr>
<td>Odor</td>
<td>alcoholic</td>
</tr>
<tr>
<td>Melting point</td>
<td>-114 °C</td>
</tr>
<tr>
<td>Boiling point</td>
<td>78 °C</td>
</tr>
<tr>
<td>Flammability</td>
<td>no data available</td>
</tr>
<tr>
<td>Explosive limits (lower / upper)</td>
<td>3.5 ... 15 Vol%</td>
</tr>
<tr>
<td>Flash point</td>
<td>&gt; 12 °C</td>
</tr>
<tr>
<td>Flashing temperature</td>
<td>425 °C</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>no data available</td>
</tr>
<tr>
<td>pH value</td>
<td>7</td>
</tr>
<tr>
<td>Kinematic viscosity</td>
<td>no data available</td>
</tr>
<tr>
<td>Solubility in water</td>
<td>0-100 %</td>
</tr>
<tr>
<td>Dispersion coefficient (o/w)</td>
<td>no data available</td>
</tr>
<tr>
<td>Vapour pressure (20°C)</td>
<td>59 hPa</td>
</tr>
<tr>
<td>Specific gravity</td>
<td>0,79-0,86 g/cm³</td>
</tr>
<tr>
<td>Relative vapour density (air=1)</td>
<td>1,59</td>
</tr>
<tr>
<td>Particle size</td>
<td>no data available</td>
</tr>
</tbody>
</table>

### 30 mL NO₂ -1

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>State of aggregation</td>
<td>liquid</td>
</tr>
<tr>
<td>Colour</td>
<td>colourless</td>
</tr>
<tr>
<td>Odor</td>
<td>odorless</td>
</tr>
<tr>
<td>Melting point</td>
<td>no data available</td>
</tr>
<tr>
<td>Boiling point</td>
<td>no data available</td>
</tr>
<tr>
<td>Flammability</td>
<td>no data available</td>
</tr>
<tr>
<td>Explosive limits (lower / upper)</td>
<td>no data available</td>
</tr>
<tr>
<td>Flash point</td>
<td>no data available</td>
</tr>
<tr>
<td>Flashing temperature</td>
<td>no data available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>no data available</td>
</tr>
<tr>
<td>pH value</td>
<td>2-3</td>
</tr>
<tr>
<td>Kinematic viscosity</td>
<td>no data available</td>
</tr>
<tr>
<td>Solubility in water</td>
<td>no data available</td>
</tr>
<tr>
<td>Dispersion coefficient (o/w)</td>
<td>no data available</td>
</tr>
<tr>
<td>Vapour pressure (20°C)</td>
<td>no data available</td>
</tr>
<tr>
<td>Specific gravity</td>
<td>1,04 g/cm³</td>
</tr>
<tr>
<td>Relative vapour density (air=1)</td>
<td>1,59</td>
</tr>
<tr>
<td>Particle size</td>
<td>no data available</td>
</tr>
</tbody>
</table>

### 30 mL NH₄ -1

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>State of aggregation</td>
<td>liquid</td>
</tr>
<tr>
<td>Colour</td>
<td>colourless</td>
</tr>
<tr>
<td>Odor</td>
<td>odorless</td>
</tr>
<tr>
<td>Melting point</td>
<td>no data available</td>
</tr>
</tbody>
</table>
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
Avoid contact with concentrated acids and oxidizing agents.

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.

8 mL GH-1
Chemical: triethanolamine  CAS No.: 102-71-6
TSCA Inventory: listed California Proposition 65 List: not listed
Australia NICNAS: not listed Canada CEPA 1999: DSL Yes
Japan CASLP/PRTR: PAC Yes, 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-25940
LD50 orl rat: > 5000 mg/kg

Chemical: ethanol  CAS No.: 64-17-5
TSCA Inventory: listed California Proposition 65 List: not listed
ACGIH: 1000 ppm
Exposure Routes: inhalation, ingestion, skin and/or eye contact
Target Organs: Eyes, skin, respiratory system, central nervous system, liver, blood, reproductive system
Symptoms: irritation eyes, skin, nose; headache, drowsiness, lassitude (weakness, exhaustion), narcosis; cough; liver damage; anemia; reproductive, teratogenic
Australia NICNAS: not listed Canada CEPA 1999: DSL Yes
Japan CASLP/PRTR: not listed, Japan PDSCL: not listed
Japan ISHL: listed ≥0,1%/≥0,1%, Article 57-2 (SDS required)
South Korea TCCA: not listed
Korea Exist.Chem.Inventory: KE-13217
LD50 orl rat: 6200 mg/kg
LC_Low inh gpg: 21,900 mg/L
LC_Low inh hmn: 1400 mg/kg
LC50 inh mus: 123,4 mg/L/4H
LC50 inh rat: 115,9-133,6 mg/L/4H
LD50 orl mus: 3450 mg/kg
TRGS 905 (DE): K5, M5, R F C

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

2,5 g NH₄  CAS No.: 7647-14-5
Chemical: sodium chloride
TSCA Inventory: listed
Korea Exist.Chem.Inventory: KE-31387
LD50 orl rat: 3000 mg/kg
## Chemical: dichloroisocyanuric acid, Na salt
CAS No.: 2893-78-9

### TSCA Inventory:
- Listed
- California Proposition 65: 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:
- Not listed

### South Korea TCCA:
- Not listed

### Korea Exist.Chem.Inventory:
- KE-10215, >25% Toxic 2014-1-688

<table>
<thead>
<tr>
<th>LD50 orl rat</th>
<th>LC_LOW orl hmn</th>
</tr>
</thead>
<tbody>
<tr>
<td>550-1600 mg/kg</td>
<td>3570 mg/kg</td>
</tr>
</tbody>
</table>

## 25 mL PO -2

### Chemical: sodium disulfite
CAS No.: 7681-57-4

### TSCA Inventory:
- Listed
- California Proposition 65: Not listed

### Exposure Routes:
- Inhalation, ingestion, skin and/or eye contact

### Target Organs:
- Eyes, skin, respiratory system

### Symptoms:
- Irritation eyes, skin, mucous membrane

### Australia NICNAS:
- Not listed
- Canada CEPA 1999: DSL Yes

### Japan CSCL/PRTR:
- Not listed, Japan PDSCL: Not listed

### Japan ISHL:
- Listed ≥1,0%/≥1,0%, Article 57-2 (SDS required)

### South Korea TCCA:
- Not listed

### Korea Exist.Chem.Inventory:
- KE-12701

| LD50 orl rat | 1540 mg/kg |

## 10 mL NH3 -3

### Chemical: thymol
CAS No.: 89-83-8

### TSCA Inventory:
- Listed

### Korea Exist.Chem.Inventory:
- KE-24420

| LD50 orl rat | 980 mg/kg |

### Chemical: sodium nitroprusside
CAS No.: 13755-38-9

### TSCA Inventory:
- Listed (CAS 14402-89-2)

### Korea Exist.Chem.Inventory:
- Not listed

<table>
<thead>
<tr>
<th>LD50 orl rat</th>
<th>LC_LOW orl hmn</th>
</tr>
</thead>
<tbody>
<tr>
<td>99 mg/kg</td>
<td>20 mg/kg</td>
</tr>
</tbody>
</table>

### Chemical: ethanol
CAS No.: 64-17-5

### TSCA Inventory:
- Listed
- California Proposition 65: 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-35518

<table>
<thead>
<tr>
<th>LD50 orl rat</th>
<th>LC_LOW inh ppm</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; 2000 mg/kg</td>
<td>3450 mg/kg</td>
</tr>
</tbody>
</table>

### TRGS 905 (DE):
- K5, M5, R r C

## 5 g NO3 -2

### Chemical: zinc powder (stabilized)
CAS No.: 7440-66-6

### TSCA Inventory:
- Listed

### Korea Exist.Chem.Inventory:
- KE-35518

<table>
<thead>
<tr>
<th>LD50 orl rat</th>
<th>LC_LOW inh ppm</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; 2000 mg/kg</td>
<td>0,124 mg/L/50M</td>
</tr>
</tbody>
</table>
LC50 inh rat: 5,41 mg/L/4H

30 mL NO 3 -1
Chemical: citric acid  CAS No.: 77-92-9
TSCA Inventory: listed
Korea Exist.Chem.Inventory: KE-20831
LD50 orl rat: > 3000 mg/kg
LC50 inh rat: 5,800 mg/L
LD50 orl mus: 5400 mg/kg
LD50 scu rat: 5500 mg/kg

5 g NO 2 -2
Chemical: citric acid  CAS No.: 77-92-9
TSCA Inventory: listed
Korea Exist.Chem.Inventory: KE-20831
LD50 orl rat: > 3000 mg/kg
LC50 inh rat: 5,800 mg/L
LD50 orl mus: 5400 mg/kg
LD50 scu rat: 5500 mg/kg

Chemical: N-(1-naphthyl)-ethylenediamine dihydrochloride  CAS No.: 1465-25-4
TSCA Inventory: listed
Korea Exist.Chem.Inventory: not listed
LD50 orl rat: >3000 mg/kg

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

Chemical: ethanol  CAS No.: 64-17-5
TSCA Inventory: listed California Proposition 65 List: not listed
ACGIH: 1000 ppm
Exposure Routes: inhalation, ingestion, skin and/or eye contact
Target Organs: Eyes, skin, respiratory system, central nervous system, liver, blood, reproductive system
Symptoms: irritation: eyes, skin, nose; headache, drowsiness, lassitude (weakness, exhaustion), narcosis; cough; liver damage; anemia; reproductive, teratogenic
Australia NICNAS: not listed  Canada CEPA 1999: DSL yes
Japan CSCL/PRTR: not listed, Japan PDSCL: not listed
Japan ISHL: listed ≥0,1%/≥0,1%, Article 57-2 (SDS required)
South Korea TCCA: not listed
Korea Exist.Chem.Inventory: KE-13217
LD50 orl rat: 6200 mg/kg
LC_Low inh gpg: 21,900 mg/L
LC_Low inh hmn: 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)  CAS No.: 77-09-8
TSCA Inventory: listed California Proposition 65 List: listed, cancer
Australia NICNAS: not listed  Canada CEPA 1999: DSL yes
Japan CSCL/PRTR: PRTR - Class II Designated Chemical Substance, Japan PDSCL: not listed
Japan ISHL: not listed
South Korea TCCA: not listed
Korea Exist.Chem.Inventory: KE-03234
LD50 orl rat: >1000 mg/kg
EU carcinogen: Carcinogenicity cat. 2, Germ Cell Mutagenicity cat. 3, >5% Reproductive Toxicity cat. 3
TRGS 905 (DE): Karzinogenität Kat. 2
### 30 mL NO₂ -1
**Chemical:** sulphanilamide  
**CAS No.:** 63-74-1  
**TSCA Inventory:** listed  
**Korea Exist.Chem.Inventory:** KE-01188  
**LD50 orl rat:** 3900 mg/kg

**Chemical:** o-phosphoric acid  
**CAS No.:** 7664-38-2  
**TSCA Inventory:** listed  
**California Proposition 65 List:** not listed  
**ACGIH:** 1 ppm  
**Exposure Routes:** inhalation, ingestion, skin and/or eye contact  
**Target Organs:** Eyes, skin, respiratory system  
**Symptoms:** irritation eyes, skin, mucous membrane; pneumonitis; eye, skin burns; temporary loss of hair

**Australia NICNAS:** not listed  
**Canada CEPA 1999:** DSL Yes  
**Japan CSCL/PRTR:** not listed, Japan PDSCL: not listed  
**Japan ISHL:** listed ≥1.0%/≥1.0%, Article 57-2 (SDS required)  
**South Korea TCCA:** not listed  
**Korea Exist.Chem.Inventory:** KE-27427  
**LD50 orl rat:** 1530 mg/kg  
**LC50 inh rat:** 1,689 mg/L

**TRGS 905 (DE):** R F C

### 30 mL NH₃ -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, nose

**Australia NICNAS:** not listed  
**Canada CEPA 1999:** DSL Yes  
**Japan CSCL/PRTR:** not listed, Japan PDSCL: not listed  
**Japan ISHL:** listed ≥1.0%/≥1.0%, Article 57-2 (SDS required)  
**South Korea TCCA:** not listed  
**Korea Exist.Chem.Inventory:** KE-31487  
**LD50 orl rat:** [40%] 1250 / [≤25%] >2000 mg/kg  
**LD50 orl mus:** 40 mg/kg

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

### 25 mL PO₄ -1
**Chemical:** sulfuric acid  
**CAS No.:** 7664-93-9  
**TSCA Inventory:** listed  
**California Proposition 65 List:** not listed  
**ACGIH:** 1 ppm  
**Exposure Routes:** inhalation, ingestion, skin and/or eye contact  
**Target Organs:** Eyes, skin, respiratory system, teeth  
**Symptoms:** irritation eyes, skin, nose

**Australia NICNAS:** not listed  
**Canada CEPA 1999:** DSL Yes  
**Japan CSCL/PRTR:** not listed, Japan PDSCL: Deleterious Substance  
**Japan ISHL:** listed ≥1.0%/≥1.0%, Article 57-2 (SDS required)  
**South Korea TCCA:** Accident Precaution Chemical Yes  
**Korea Exist.Chem.Inventory:** KE-32570  
**LD50 orl rat:** 2140 mg/kg  
**LC50 inh mus:** 0,85 mg/L/4H

**TRGS 905 (DE):** R F C

**Chemical:** ammonium heptamolybdate  
**CAS No.:** 12054-85-2  
**TSCA Inventory:** listed (CAS 11098-84-3)  
**Japan ISHL:** listed ≥1.0%/≥0.1%,  
**Korea Exist.Chem.Inventory:** not listed  
**LD50 orl rat:** 2000-5000 mg/kg  
**LD50 inh rat:** 1,930-5,840 mg/L/4H
Safety Data Sheet according to Regulations REACh 1907/2006/EC

REF: 933200  VISOCOLOR School reagent case Refill set  Page: 24/31
Printing date: 04.04.2023  Date of issue: 26.01.2023  Version: 2.2.4.11

30 mL GH-2
Chemical: ethylenedinitriolo tetraacetic acid, di Na-salt (EDTA-Na)  CAS No.: 6381-92-6
TSCA Inventory: listed (CAS 139-33-3)
LD50 (oral rat): 2800 mg/kg

Chemical: ammonia solution  CAS No.: 1336-21-6
TSCA Inventory: listed
Exposure Routes: inhalation, ingestion (solution), skin and/or eye contact (solution/liquid)
Target Organs: Eyes, skin, respiratory system
Symptoms: irritation eyes, nose, throat; dyspnea (breathing difficulty), wheezing, chest pain; pulmonary edema; pink frothy sputum; skin burns, vesiculation; I

Australia NICNAS: not listed
Canada CEPA 1999: DSL yes, Toxic Substances (Schedule 1) Yes (Item 53.)
Japan CSCL/PRTR: not listed, Japan PDSCL: Deleterious Substance
Japan ISHL: listed ≥0,2%/≥0,1%, Article 57-2 (SDS required)
South Korea TCCA: not listed
Korea Exist.Chem.Inventory: KE-01688, >10% Toxic 97-1-184
LD50 (oral rat): 350 mg/kg
LC50 (ih hmn): 5000 mg/L
LC50 (ih rat): 2000 ppm/4H

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.

8 mL GH-1
Chemical: triethanolamine  CAS No.: 102-71-6
PNEC (fresh water): 0.32 mg/L
PNEC = Predicted No Effected Concentration
LC50 (daphnia/48h): >1000 mg/L
EC50 (daphnia/48h): >1000 mg/L
Water hazard class (DE): 1  WGK No.: 0201
Dispersion coefficient (o/w): 2.3
Storage class (VCI): 12

Chemical: ethanol  CAS No.: 64-17-5
PNEC (fresh water): 0.96 mg/L
LC50 (daphnia magna/48h): >1000 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
LC50 (scenedesmus quadricauda/72h): 5000 mg/L
EC10 (pseudomonas putita/16h): 6500 mg/L
Water hazard class (DE): 1  WGK No.: 0096
Dispersion coefficient (o/w): 0.31
Storage class (VCI): 3

Chemical: indicator dye(s)  CAS No.: -
Storage class (VCI): 12-13

2.5 g NH4 -2
Chemical: sodium chloride  CAS No.: 7647-14-5
Water hazard class (DE): 1
Storage class (VCI): 12-13
Safety Data Sheet
according to Regulations REACh 1907/2006/EC

REF: 933200
Printing date: 04.04.2023

VISOCOLOR School reagent case Refill set
Date of issue: 26.01.2023
Version: 2.2.4.11

Software: M2 V 6.1.1.5

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

25 mL PO 1 -2
Chemical: sodium disulfite
CAS No.: 7681-57-4
LC50 fish/96h: 150-220 mg/L
EC50 daphnia/48h: 89 mg/L
IC50 scenedesmus quadricauda/72h: 48 mg/L
Water hazard class (DE): 1
WGK No.: 1169
Storage class (VCI): 8 B

10 mL NH 4 -3
Chemical: thymol
CAS No.: 89-83-8
Harmful to aquatic life with long lasting effects. Avoid contact of substance/mixture to environment.
Environmental hazards must not be labelled with P phrases until 125 mL (EU 1272/2008 Annex I - 1.5.2).
LC50 pimephales promelas/96h: 3.2 mg/L
EC50 daphnia/48h: 3.2 mg/L
IC50 scenedesmus quadricauda/72h: 9.3-14.2 g/L
Water hazard class (DE): 2
WGK No.: 1220
Storage class (VCI): 8 A

Chemical: sodium nitroprusside
Water hazard class (DE): 3
Storage class (VCI): 6.1 B

5 g NO 3 -2
Chemical: zinc powder (stabilized)
CAS No.: 7440-66-6
Toxic to aquatic life with long lasting effects. Avoid contact of substance/mixture to environment.
Environmental hazards must not be labelled with H and P phrases until 125 mL (EU 1272/2008 Annex I - 1.5.2).
LC50 fish/96h: 2.01 mg/L
EC50 daphnia/48h: 0.131 mg/L
EC10 pseudokirchneriella subcapitata/72h: IC50: 0.713 mg/L
Water hazard class (DE): 1
WGK No.: 0096
Dispersion coefficient (o/w): -0.31
Storage class (VCI): 3

30 mL NO 3 -1
Chemical: citric acid
CAS No.: 77-92-9
PNEC (fresh water): 0.96 mg/L
PNEC = Predicted No Effected Concentration
LC50 daphnia magna/48h: >100 mg/L
LC50 pimephales promelas/96h: 13400 - 15100 mg/L [48h] 8140 mg/L
LC50 leuciscus idus/96h: 13 g/L
LC50 fish/96h: 9.3-14.2 g/L
EC50 daphnia/48h: 5000 mg/L
EC10 pseudomonas putita/16h: IC50: 850 mg/L
Water hazard class (DE): 2
WGK No.: 7325
Storage class (VCI): 13

5 g NO 2 -2
Chemical: citric acid
CAS No.: 77-92-9
PNEC (fresh water): 440 mg/L
PNEC = Predicted No Effected Concentration
LC50 leuciscus idus/96h: 440-760 mg/L
EC50 daphnia/48h: 1535 24h mg/L
IC50 scenedesmus quadricauda/72h: 7d: 425-640 mg/L
EC10 pseudomonas putita/16h: EC50: >10 g/L
Water hazard class (DE): 1
WGK No.: 0057
Dispersion coefficient (o/w): -1.72
Storage class (VCI): 12-13

Software: M2 V 6.1.1.5
IC50 *scenedesmus quadricauda*/*72h* : 7d: 425-640 mg/L
EC10 *pseudomonas putida*/*16h* : EC0: >10 g/L
Water hazard class (DE): 1
Dispersion coefficient (o/w): -1.72
Storage class (VCI): 12-13

Chemical: *N-(1-naphthyl)-ethylenediamine dihydrochloride*  
CAS No.: 1465-25-4
Water hazard class (DE): 3
Storage class (VCI): 13

**24 mL pH-1**
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

**30 mL NO₂ -1**
Chemical: *sulfanilamide*  
CAS No.: 63-74-1
Water hazard class (DE): 1
Storage class (VCI): 12-13

Chemical: *o-phosphoric acid*  
CAS No.: 7664-38-2
LC50 *fish*/*96h* : 3-3.5 g/L
Water hazard class (DE): 1
Storage class (VCI): 8 B

**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
Storage class (VCI): 8 B

Chemical: *tri-sodium citrate*  
CAS No.: 6132-04-3
LC50 *fish*/*96h* : 18-32 g/L
EC50 *daphnia*/*48h* : 5.6-10 g/L
EC50 *chlorella vulgaris*/*5d* : >18-32 g/L
EC10 *pseudomonas putida*/*16h* : EC50 *ps. fluorescens*/*8h* : >1.8-3.2 g/L
Water hazard class (DE): 1
Storage class (VCI): 12-13

**25 mL PO₄ -1**
Chemical: *sulfuric acid*  
CAS No.: 7664-93-9
PNEC (fresh water): 2.5 µg/L

LC50 *fish*/*96h* : [NOEC, 65d] 25 µg/L
EC50 *daphnia*/*48h* : 100 mg/L
EC10 *pseudomonas putida*/*16h* : [72h] 100 mg/L

*PNEC = Predicted No Effect Concentration*
Water hazard class (DE): 1  WGK No.: 0182
Storage class (VCI): 8 B

Chemical: ammonium heptamolybdate  CAS No.: 12054-85-2
Water hazard class (DE): 1  WGK No.: 0637
Storage class (VCI): 12-13

30 ml GH-2
Chemical: ethylenedinitrilo tetraacetic acid, di Na-salt (EDTA-Na)  CAS No.: 6381-92-6
PNEC (fresh water): 2.2 mg/L
PNEC = Predicted No Effected Concentration
LC50 fish/96h: [4d] 41-1592 mg/L
EC50 daphnia/48h: 140 mg/L
EC10 pseudomonas putida/16h: [72h] 2.77-1000 mg/L
Water hazard class (DE): 2
Dispersion coefficient (o/w): 4.3
Storage class (VCI): 12-13

Chemical: ammonia solution  CAS No.: 1336-21-6
PNEC (fresh water): 0.0011 mg/L
PNEC = Predicted No Effected Concentration
LC50 fish/96h: 0.89 mg/L
EC50 daphnia/48h: 101 mg/L
Water hazard class (DE): 2  WGK No.: 0211
Storage class (VCI): 8 B

12.2 Persistence and degradability
not necessary

12.3 Bioaccumulative potential
not necessary

12.4 Mobility in soil
not necessary

12.5 Results of PBT and vPvB assessment
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
Or use Alternative declaration for transportation:

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

14.1 UN number: 1436 14.2 UN proper shipping name: Zinc powder / Zinc dust
14.3 Class: 4.2 14.4 Packing group: II

Road transport ADR
Classification code: WS
Limited Quantity: 0
Excepted Quantity: E 2
Air transport ICAO
Limited Quantity: LQ
Excepted Quantity: E 2
PAX: 483 max. weight PAX: 15 Kg
CAO: 490 max. weight CAO: 50 Kg

Maritime transport IMDG
EmS: F-G, S-O

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
Excepted Quantity: E 2
Air transport ICAO
Limited Quantity: LQ 4
Excepted Quantity: E 2
PAX: 353 max. weight PAX: 5 L
CAO: 364 max. weight CAO: 60 L

Maritime transport IMDG
EmS: F-E, S-E

14.1 UN number: 3264 14.2 UN proper shipping name: Corrosive liquid, acidic, inorganic, n.o.s. (o-phosphoric acid, sodium disulfite solution)
14.3 Class: 8 14.4 Packing group: II

Road transport ADR
Classification code: C1
Limited Quantity: 1 L
Excepted Quantity: E 2
Air transport ICAO
Limited Quantity: LQ 22
Excepted Quantity: E 2
PAX: 851 max. weight PAX: 1 L
CAO: 855 max. weight CAO: 30 L

Maritime transport IMDG
EmS: F-A, S-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
Excepted Quantity: E 2
Air transport ICAO
Limited Quantity: LQ 22
Excepted Quantity: E 2
PAX: 851 max. weight PAX: 1 L
CAO: 855 max. weight CAO: 30 L

Maritime transport IMDG
EmS: F-A, S-B
14.5 Environmental hazards
one, contains only small quantities of hazardous substances, contains only small amounts of these substances

14.6 Special precautions for user
not necessary

14.7 Carriage in bulk by sea in accordance with IMO instruments
Not applicable.

SECTION 15: Regulatory information

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

15.2 Chemical safety assessment
not necessary for these small amounts

SECTION 16: Other information

16.1 Changes compared to the last version
Between versions 2.2.4.11 and 2.2.2.2 following changes were applied: - 2 composition data corrected - 9 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.
H226 Flammable liquid and vapour.
H290 May be corrosive to metals.
H314 Causes severe skin burns and eye damage.
H315 Causes skin irritation.
H318 Causes serious eye damage.
H319 Causes serious eye irritation.
H411 Toxic to aquatic life with long lasting effects.
H412 Harmful to aquatic life with long lasting effects.
EUH031 Contact with acids liberates toxic gas.

16.2.2 List of relevant P phrases
P260sh Do not breathe dust/vapours.
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 use.
Look about employee restrictions for young people (f. ex. 94/33/EC or DE § 22 J ArbSchG)! 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
### 16.5 Further information

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### 16.6 Legend / Abbreviations

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<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>acc.</td>
<td>according</td>
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<tr>
<td>ADR</td>
<td>Convention concerning the International Carriage of Dangerous Goods by Road</td>
</tr>
<tr>
<td>Act</td>
<td>acute</td>
</tr>
<tr>
<td>BAT</td>
<td>biological workplace tolerance value</td>
</tr>
<tr>
<td>CAO</td>
<td>Cargo Aircraft Only</td>
</tr>
<tr>
<td>Carc</td>
<td>carcinogenic</td>
</tr>
<tr>
<td>CAS</td>
<td>Chemical Abstracts Service</td>
</tr>
<tr>
<td>CLP</td>
<td>Classification, Labelling and Packaging regulation</td>
</tr>
<tr>
<td>CMR</td>
<td>carcinogenic, mutagen, reproduction toxic</td>
</tr>
<tr>
<td>Corr</td>
<td>corrosive</td>
</tr>
<tr>
<td>COD</td>
<td>chemical oxygen demand</td>
</tr>
<tr>
<td>CSCL</td>
<td>Chemical Substance Control Law (Jp)</td>
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<tr>
<td>Dam</td>
<td>damage</td>
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<tr>
<td>DNEL</td>
<td>Derived No-Effect Level (for workers)</td>
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<td>dermal</td>
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<tr>
<td>EC10</td>
<td>Concentration causing a toxic effect in 10% of the test organisms</td>
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<td>EC</td>
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<td>EmS</td>
<td>Guide to accident management measures on ships</td>
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<td>EU</td>
<td>European Union</td>
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<td>fish</td>
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<td>GHS</td>
<td>Global Harmonized System of Classification and Labeling of Chemicals</td>
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<td>gpg</td>
<td>guinea pig</td>
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<td>International Civil Aviation Organization</td>
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<td>IMDG</td>
<td>International Maritime Dangerous Goods Code</td>
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<td>intravenous</td>
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<tr>
<td>ipt</td>
<td>intraperitoneal</td>
</tr>
<tr>
<td>ISHL</td>
<td>Industrial Safety and Health Law (Jp)</td>
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</table>
LC50: leethal concentration 50%
LD50: leethal 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)
NDR: Non-rapidly degradable
onchorhynchus mykiss: fish, rainbow trout
orf: 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
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.