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

1.1 Product identifier

REF: 933100
Product name: VISOCOLOR School reagent case

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.

<table>
<thead>
<tr>
<th>Substance</th>
<th>Amount</th>
<th>UFI</th>
</tr>
</thead>
<tbody>
<tr>
<td>NH₄⁺</td>
<td>1 x 30 mL</td>
<td>AADU-73NS-C20E-U17Y</td>
</tr>
<tr>
<td>NH₄⁺</td>
<td>1 x 2.5 g</td>
<td>JKDU-R3QY-820W-T205</td>
</tr>
<tr>
<td></td>
<td>1 x 10 mL</td>
<td>XPDU-83EC-K20D-GDK7</td>
</tr>
<tr>
<td>GH⁻</td>
<td>1 x 30 mL</td>
<td>D3EU-S3VC-320V-S3GJ</td>
</tr>
<tr>
<td>NO₃⁻</td>
<td>1 x 5 g</td>
<td>J6EU-93JR-E20C-FF2M</td>
</tr>
<tr>
<td>NO₂⁻</td>
<td>1 x 24 mL</td>
<td>DCEU-93XJ-120C-S47R</td>
</tr>
<tr>
<td>PO₄³⁻</td>
<td>1 x 25 mL</td>
<td>QFEU-T3MX-A20U-EFTT</td>
</tr>
<tr>
<td></td>
<td>1 x 25 mL</td>
<td>NJEU-A3AA-N20A-3TDV</td>
</tr>
</tbody>
</table>

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)
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

<table>
<thead>
<tr>
<th>Signal word</th>
<th>Hazard identification</th>
<th>Hazard classes/categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>GHS02</td>
<td>H225</td>
<td>Flam. Liq. 2</td>
</tr>
<tr>
<td>GHS05</td>
<td>H290</td>
<td>Met. Corr. 1</td>
</tr>
<tr>
<td>GHS07</td>
<td>H314</td>
<td>Skin Corr. 1B</td>
</tr>
<tr>
<td>GHS09</td>
<td>H411</td>
<td>Aquatic Chronic 2</td>
</tr>
<tr>
<td></td>
<td>EUH031</td>
<td>031 not defined</td>
</tr>
</tbody>
</table>
2.1 Classification of the substance or mixture according to Regulation (EC) 1272/2008

8 mL GH-1

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>
</tbody>
</table>

25 mL PO ±1

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 ±1

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

Signal word Do not need labelling as hazardous

No hazard class

10 mL NH ±3

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
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
Met. Corr. 1

5 g NO₃ -2

GHS09

Signal word
NONE

Hazard identification
H411
Aquatic Chronic 2

25 mL PO₄ -2
Safety Data Sheet
according to Regulations REACh 1907/2006/EC

REF: 933100
Printing date: 04.04.2023

VISOCOLOR School reagent case
Date of issue: 26.01.2023

Version: 2.2.4.11

List of H phrases: see section 16.2

2.2 Label elements according regulation (EC) 1272/2008

According CLP directive inner packages must be only labelled with GHS symbol(s) and product identifier(s) (EU 1272/2008 Annex I - 1.5.1.2). Hazardous 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

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 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 NO₃ -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
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. H290 "May be corrosive to metals." has only relevance for higher concentrations and larger amounts. The labelling GHS05 would be creating an "OVERLABELLING" (see GHS Directive 1272/2008/EC Annex I, chapter 1.5.2.1.3., until 125 mL no labelling necessary).

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

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

8 mL GH-1

<table>
<thead>
<tr>
<th>Substance name:</th>
<th>triethanolamine</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS No.:</td>
<td>102-71-6</td>
</tr>
<tr>
<td>Substance rating:</td>
<td>H315, Skin Irrit. 2, H319, Eye Irrit. 2</td>
</tr>
<tr>
<td>Formula:</td>
<td>C₆H₁₅NO₃</td>
</tr>
<tr>
<td>Pseudonym (de):</td>
<td>2,2',2''-Nitrololtriethanol, TEA, Tris(2-hydroxyethyl)amin</td>
</tr>
<tr>
<td>REACH Reg. No.:</td>
<td>01-2119486482-31-xxxx</td>
</tr>
<tr>
<td>Dual-use:</td>
<td>The application of this chemical is exempt from the regulation 2017/2268/EU (see IC350 remark 4).</td>
</tr>
<tr>
<td>EC No.:</td>
<td>203-049-8</td>
</tr>
<tr>
<td>Concentration:</td>
<td>20 - &lt;45 %</td>
</tr>
<tr>
<td>acc. CLP (GHS):</td>
<td>H315, Skin Irrit. 2, H319, Eye Irrit. 2</td>
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</tbody>
</table>

<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>C₂H₅O</td>
</tr>
<tr>
<td>Pseudonym (de):</td>
<td>Äthylalkohol, vergälltter Spiritus</td>
</tr>
<tr>
<td>REACH Reg. No.:</td>
<td>01-2119457610-43-xxxx</td>
</tr>
<tr>
<td>Concentration:</td>
<td>20 - &lt;35 %</td>
</tr>
<tr>
<td>acc. CLP (GHS):</td>
<td>H226, Flam. Liq. 3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Substance name:</th>
<th>indicator dye(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS No.:</td>
<td>-</td>
</tr>
<tr>
<td>Substance rating:</td>
<td>No criteria for classification or naming of chemical not required.</td>
</tr>
<tr>
<td>Concentration:</td>
<td>0,1 - &lt;1 %</td>
</tr>
<tr>
<td>acc. CLP (GHS):</td>
<td>The criteria for classification are not fulfilled.</td>
</tr>
</tbody>
</table>
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.: 231-673-0
Indice No.: 016-063-00-2
Concentration: 10 - <25 %
acc. CLP (GHS): H318, Eye Dam. 1, EUH031, 031 not defined

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]₂·2H₂O
Pseudonym (de): Natriumpentacyanonitrosylferrat(II)
EC No.: 238-373-9
Concentration: 1 - <5 %
acc. CLP (GHS): The criteria for classification are not fulfilled.
Safety Data Sheet
according to Regulations REACh 1907/2006/EC

Substance name: ethanol
CAS No.: 64-17-5
(denatured with 1% 2-butanone / 1% 2-propanol)
Substance rating: H225, Flam. Liq. 2
Formula: C₂H₆O; C₂H₅OH
Pseudonym (de): Äthylalkohol, vergällter Spiritus
REACH Reg. No.: 01-2119457610-43-xxxx
EC No.: 200-578-6
Concentration: 35 - 65 %
acc. CLP (GHS): H226, Flam. Liq. 2

Substance name: zinc powder (stabilized)
CAS No.: 7440-86-6
Substance rating: H410, Aquatic Chronic 1
Formula: Zn
REACH Reg. No.: 01-2119467174-37-xxxx
EC No.: 231-175-3
Concentration: 2.5 - <10 %
acc. CLP (GHS): H411, Aquatic Chronic 2

Substance name: citric acid
CAS No.: 77-92-9
Substance rating: H319, Eye Irrit. 2, H335, STOT SE 3
Formula: C₆H₈O₇
Pseudonym (de): Zitronensäure
REACH Reg. No.: 01-2119457026-42-xxxx
EC No.: 201-069-1
Concentration: 1 - <10 %
acc. CLP (GHS): The criteria for classification are not fulfilled.

Substance name: citric acid
CAS No.: 77-92-9
Substance rating: H319, Eye Irrit. 2, H335, STOT SE 3
Formula: C₆H₈O₇
Pseudonym (de): Zitronensäure
REACH Reg. No.: 01-2119457026-42-xxxx
EC No.: 201-069-1
Concentration: 1 - <10 %
acc. CLP (GHS): The criteria for classification are not fulfilled.

Substance name: N-(1-naphthyl)-ethylendiamine dihydrochloride
CAS No.: 1465-25-4
Substance rating: H315, Skin Irrit. 2, H319, Eye Irrit. 2
Formula: C₁₂H₁₈Cl₂N₂
EC No.: 216-981-2
Concentration: 1 - <10 %
acc. CLP (GHS): The criteria for classification are not fulfilled.

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

REF: 933100  VISOCOLOR School reagent case  Page: 9/31
Printing date: 04.04.2023  Date of issue: 26.01.2023  Version: 2.2.4.11

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: C₂H₆O; C₂H₅OH
Pseudonym (de): Äthylalkohol, vergällter Spiritus
REACH Reg. No.: 01-2119457610-43-xxxx
EC No.: 200-578-6  Indice No.: 603-002-00-5
Concentration: 90 - <100 %
acc. CLP (GHS): H225, Flam. Liq. 2

Substance name: phenolphthalein (pH indicator)  CAS No.: 77-09-8
Substance rating: H341, Mut. 2, H350, Carc. 1B, H361f, Repr. 2
Formula: C₂₀H₁₄O₄
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 NO₂⁻
Substance name: sulfanilamide  CAS No.: 63-74-1
Substance rating: No criteria for classification or naming of chemical not required.
Formula: C₆H₆N₂O₂S
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.: 7664-38-2
Formula: H₃PO₄ + H₂O
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 NH₄⁺
**Safety Data Sheet**

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

**Substance**
- **Substance name:** sodium hydroxide solution  
- **CAS:** 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**
- **Substance name:** tri-sodium citrate  
- **CAS:** 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:** 7664-93-9
- **Substance rating:** H315, Skin Irrit. 2, H319, Eye Irrit. 2
- **Formula:** H₂SO₄•H₂O
- **REACH Reg. No.:** 01-2119458383-20-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:** 12054-85-2
- **Substance rating:** No criteria for classification or naming of chemical not required.
- **Formula:** H₂Mo₇N₆O₂₄
- **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:** 6381-92-6
- **Substance rating:** H332, Acute Tox. 4 inh., H373, STOT SE 3
- **Formula:** C₁₀H₁₄N₂Na₂O₈•2H₂O
- **Pseudonym (de):** Titriplex® III
- **EC No.:** 205-368-3  
  **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 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. 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
PvPb: 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
8 mL GH-1
Chemical: triethanolamine
CAS No.: 102-71-6

DNELE: [derm] 6.3; [inh] 5 mg/m³
DNEL = Derived No-Effect Level (for workers)
PNEC (fresh water): 0.32 mg/L
PNEC = Predicted No Effected Concentration
TRGS 900 (DE): E inhalable

Short-term exposure factor: I, (2)
- skin resorptive (H), respiratory sensitizable (Sa), skin sensitizable (Sh), teratogenic (Z) not securely excluded / (Y) certainly excluded

SUVA(CH) MAK value: [MAX] 5 e/[STEL] 10 e mg/m³
NIOSH: not listed
[TWA] Time-weighted average to a reference period of 8 hours, [STEL] Short-term exposure limit related to a 15-minute period
OSHA: not listed

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

DNELE: [derm] 343 mg/kg; [inh] 950 mg/m³
DNEL = Derived No-Effect Level (for workers)
PNEC (fresh water): 0.96 mg/L
PNEC = Predicted No 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 / 1000 mg/m³ 
[STEL] Short-term exposure limit related to a 15-minute period

OSHA: 
[TWA] 1000 ppm / 1900 mg/m³

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

2.5 g NH₄⁺-

Chemical: sodium chloride  
CAS No.: 7647-14-5

Chemical: dichloroisocyanuric acid, Na salt  
CAS No.: 2893-78-9

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

OSHA: 
[TWA] not listed

25 mL PO₄-

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

DNEL: 
[inh] 225 mg/m³ 
DNEL = Derived No-Effect Level (for workers)

TRGS 900 (DE): 
- E/e respirable

SUVA(CH) MAK value: 5 e mg/m³

NIOSH: 
[TWA] 5 mg/m³ 
[STEL] Short-term exposure limit related to a 15-minute period

OSHA: not listed

10 mL NH₃-

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

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

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

DNEL: 
[derm] 343 mg/kg; [inh] 950 mg/m³ 
DNEL = Derived No-Effect Level (for workers)

PNEC (fresh water): 0.96 mg/L 
PNEC = Predicted No 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 / 1000 mg/m³ 
[STEL] Short-term exposure limit related to a 15-minute period

OSHA: 
[TWA] 1000 ppm / 1900 mg/m³

5 g NO₃⁻-

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

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

TRGS 900 (DE): 
0.1 A / 2E mg/m³ 
E/e respirable

30 mL NO₃⁻-

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
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

Chemical: N-(1-naphthyl)-ethylenediamine dihydrochloride
CAS No.: 1465-25-4

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

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

DNEL = Derived No-Effect Level (for workers)
PNEC (fresh water): 0.96 mg/L
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:
[STEL] Time-weighted average to a reference period of 8 hours, [STEL] Short-term exposure limit related to a 15-minute period
OSHA:
[STEL] Time-weighted average to a reference period of 8 hours, [STEL] Short-term exposure limit related to a 15-minute period

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

Chemical: o-phosphoric acid
CAS No.: 7664-38-2

DNEL = Derived No-Effect Level (for workers)
EU value: [TWA] 1 /[STEL] 2 mg/m³
TRGS 900 (DE): [Sh] 1 /[15min] 2 mg/m³
E/e respirable

Short-term exposure factor: 2 (I), Y
skin resorptive (H), respiratory sensitizable (Sa), skin sensitizable (Sh), teratogenic (Z) not securely excluded / (Y) certainly excluded

SUVA(CH) MAK value: 1 mg/m³

NIOSH:
TWA / ST 3 mg/m³

OSHA:
TWA 1 mg/m³

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

Chemical: tri-sodium citrate
CAS No.: 6132-04-3
25 ml PO 4 -1
Chemical: sulfenic acid
DNEL: 50 µg/m³
DNEL = Derived No-Effect Level (for workers)
PNEC (fresh water): 2.5 µg/L
PNEC = Predicted No Effected Concentration
TRGS 900 (DE): 0.1 E mg/m³
E/ie respirable
Short-term exposure factor: 1 (I)
Skin resorptive (H), respiratory sensitizable (Sa), skin sensitizable (Sh), teratogenic (Z) not securely excluded / (Y) certainly excluded
SUVA(CH) MAK value: 0.1 e mg/m³
NIOSH: NTP Report on Carcinogens (RoC) List Yes (Known to be a human carcinogen); TWA 1 mg/m³
OSHA: [TWA] Time-weighted average to a reference period of 8 hours, [STEL] Short-term exposure limit related to a 15-minute period
Chemical: ammonium heptamolybdate
TRGS 900 (DE): [Mo] 5 E mg/m³
E/ie respirable
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
DNEL = Derived No-Effect Level (for workers)
PNEC (fresh water): 2.2 mg/L
PNEC = Predicted No Effected Concentration
Chemical: ammonia solution
DNEL: [inh] 14 mg/m³
DNEL = Derived No-Effect Level (for workers)
PNEC (fresh water): 0.0011 mg/L
PNEC = Predicted No Effected Concentration
EU value: 20 ppm / 14 mg/m³
TRGS 900 (DE): 20 ppm / 14 mg/m³
E/ie respirable
Short-term exposure factor: 2 (I), Y
Skin resorptive (H), respiratory sensitizable (Sa), skin sensitizable (Sh), teratogenic (Z) not securely excluded / (Y) certainly excluded
SUVA(CH) MAK value: 20 ppm / 14 mg/m³
NIOSH: [TWA] 25 ppm / 18 mg/m³
NIOSH STEL: 35 ppm / 27 mg/m³
[STEL] Short-term exposure limit related to a 15-minute period
OSHA: Yes (TQ = 15000 lbs) - n/a; [TWA] 50 ppm / 35 mg/m³

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

8.2.1 Respiratory protection
No additional recommendations.

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

8.2.3 Eye / Face Protection
Yes, safety glasses according EN 166 with integrated side shields or wrap-around protection or face protection.

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

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

8.2.6 Thermal hazards
no data available
### 8.3 Limitation and monitoring of environmental exposure

Do not release product into environment.

### SECTION 9: Physical and chemical properties

#### 9.1 Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th></th>
<th>8 mL GH-1</th>
<th>2.5 g NH₄-2</th>
<th>25 mL PO₄-2</th>
</tr>
</thead>
<tbody>
<tr>
<td>a)</td>
<td>State of aggregation:</td>
<td>liquid</td>
<td>liquid</td>
</tr>
<tr>
<td>b)</td>
<td>Colour:</td>
<td>green</td>
<td>colourless</td>
</tr>
<tr>
<td>c)</td>
<td>Odor:</td>
<td>alcoholic</td>
<td>chloric</td>
</tr>
<tr>
<td>d)</td>
<td>Melting point:</td>
<td>no data available</td>
<td>no data available</td>
</tr>
<tr>
<td>e)</td>
<td>Boiling point:</td>
<td>no data available</td>
<td>no data available</td>
</tr>
<tr>
<td>f)</td>
<td>Flammability:</td>
<td>no data available</td>
<td>no data available</td>
</tr>
<tr>
<td>g)</td>
<td>Explosive limits (lower / upper):</td>
<td>no data available</td>
<td>no data available</td>
</tr>
<tr>
<td>h)</td>
<td>Flash point:</td>
<td>27 °C</td>
<td>no data available</td>
</tr>
<tr>
<td>i)</td>
<td>Flashing temperature:</td>
<td>no data available</td>
<td>no data available</td>
</tr>
<tr>
<td>j)</td>
<td>Decomposition temperature:</td>
<td>no data available</td>
<td>no data available</td>
</tr>
<tr>
<td>k)</td>
<td>pH value:</td>
<td>10</td>
<td>5-7</td>
</tr>
<tr>
<td>l)</td>
<td>Kinematic viscosity:</td>
<td>no data available</td>
<td>no data available</td>
</tr>
<tr>
<td>m)</td>
<td>Solubility in water:</td>
<td>no data available</td>
<td>no data available</td>
</tr>
<tr>
<td>n)</td>
<td>Dispersion coefficient (o/w):</td>
<td>no data available</td>
<td>no data available</td>
</tr>
<tr>
<td>o)</td>
<td>Vapour pressure (20°C):</td>
<td>no data available</td>
<td>no data available</td>
</tr>
<tr>
<td>p)</td>
<td>Specific gravity:</td>
<td>no data available</td>
<td>no data available</td>
</tr>
<tr>
<td>q)</td>
<td>Relative vapour density (air=1):</td>
<td>no data available</td>
<td>no data available</td>
</tr>
<tr>
<td>r)</td>
<td>Particle size:</td>
<td>no data available</td>
<td>no data available</td>
</tr>
</tbody>
</table>
10 mL NH₄NO₃
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
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
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
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: 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

24 mL pH-1
a) State of aggregation: liquid
b) Colour: red
c) Odor: alcoholic
d) Melting point: -114 °C
e) Boiling point: 78 °C
f) Flammability: no data available
g) Explosive limits (lower / upper): 3.5 ... 15 Vol%
h) Flash point: > 12 °C
i) Flashing temperature: 425 °C
j) Decomposition temperature: no data available
k) pH value: 7
l) Kinematic viscosity: no data available
m) Solubility in water: 0-100 %
n) Dispersion coefficient (o/w): no data available
o) Vapour pressure (20°C): 59 hPa
p) Specific gravity: 0.79-0.86 g/cm³
q) Relative vapour density (air=1): 1.59
r) Particle size: no data available

30 mL NO₂ -1
a) State of aggregation: liquid
b) Colour: colourless
c) Odor: odorless
d) Melting point: no data available
e) Boiling point: no data available
f) Flammability: no data available
g) Explosive limits (lower / upper): no data available
h) Flash point: no data available
i) Flashing temperature: no data available
j) Decomposition temperature: no data available
k) pH value: 2-3
l) Kinematic viscosity: no data available
m) Solubility in water: no data available
n) Dispersion coefficient (o/w): no data available
o) Vapour pressure (20°C): 1.04 g/cm³
p) Specific gravity: 1.04 g/cm³
q) Relative vapour density (air=1): no data available
r) Particle size: no data available

30 mL NH₄ -1
a) State of aggregation: liquid
b) Colour: colourless
c) Odor: odorless
d) Melting point: no data available
### 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
Japan CScL/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
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
LC50 inh hmn : 21,900 mg/L
LC50 inh rat : 1400 mg/kg
LC50 inh mus : 123,4 mg/L4H
LD50 orl mus : 3450 mg/kg
TRGS 905 (DE): K5, M5, R C

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

2,5 g NH₄Cl -2
Chemical: sodium chloride CAS No.: 7647-14-5
TSCA Inventory: listed
Korea Exist.Chem.Inventory: KE-31387
LD50 orl rat : 3000 mg/kg
Safety Data Sheet
according to Regulations REACh 1907/2006/EC

Chemical: dichloroisocyanuric acid, Na salt
CAS No.: 2893-78-9

TSCA Inventory: listed California Proposition 65 List: not listed
Australia NICNAS: not listed Canada CEPA 1999: DSL Yes
Japan CSCL/PRTR: not listed, Japan PDSCCL: not listed
Japan ISHL: not listed
South Korea TCCA: not listed
LD50 orl rat : 550-1600 mg/kg
LC_Low orl hmn : 3570 mg/kg

25 mL PO ± -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 PDSCCL: 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 NH ± -3

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

TSCA Inventory: listed
Korea Exist.Chem.Inventory: KE-24420
LD50 orl rat : 980 mg/kg

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

TSCA Inventory: listed (CAS 14402-89-2)
Korea Exist.Chem.Inventory: not listed
LD50 orl rat : 99 mg/kg
LC_Low orl hmn : 20 mg/kg

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

TSCA Inventory: listed California Proposition 65 List: not listed
ACGIH: 1000 ppm
Exposure Routes: inhalation, ingestion, skin and/or eye contact
Target Organs: Eyes, skin, respiratory system, central nervous system, liver, blood, reproductive system
Symptoms: irritation eyes, skin, nose; headache, drowsiness, lassitude (weakness, exhaustion), narcosis; cough; liver damage; anemia; reproductive, teratogenic
Australia NICNAS: not listed Canada CEPA 1999: DSL yes
Japan CSCL/PRTR: not listed, Japan PDSCCL: 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 : 115,9-133,8 mg/L/4H
LC50 orl mus : 3450 mg/kg
TRGS 905 (DE): K5, M5, R r C

5 g NO ± -2

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

TSCA Inventory: listed
Korea Exist.Chem.Inventory: KE-35518
LD50 orl rat : > 2000 mg/kg
LC_Low inh hmn : 0,124 mg/L/50M
LC50 inh rat: 5,41 mg/L/4H

30 mL NO₃ -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 NO₃ -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)-ethylendiamine 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
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
LC₅₀ inh gpg: 21,900 mg/L
LC₅₀ inh hmn: 1400 mg/kg
LC₅₀ inh mus: 123,4 mg/L/4H
LD₅₀ inh rat: 115,9-133,8 mg/L/4H
LD₅₀ orl mus: 3450 mg/kg
TRGS 905 (DE): K5, M5, R + C

Chemical: phenolphthalein (pH indicator)
CAS No.: 77-09-8
TSCA Inventory: listed
California Proposition 65 List: listed, cancer
Australia NICNAS: not listed
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
Safety Data Sheet
according to Regulations REACh 1907/2006/EC

REF: 933100
Printing date: 04.04.2023
Date of issue: 26.01.2023
Version: 2.2.4.11

30 mL NO₂ -1
Chemical: sulfanilamide
CAS No.: 63-74-1
TSCA Inventory: listed
Korea Exist.Chem.Inventory: KE-01188
LD₅₀ orl rat : 3900 mg/kg

Chemical: o-phosphoric acid
CAS No.: 7664-38-2
TSCA Inventory: listed
California Proposition 65 List: not listed
ACGIH: 1 ppm
Exposure Routes: inhalation, ingestion, skin and/or eye contact
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
LD₅₀ inh rat : 1,689 mg/L
TRGS 905 (DE): R F C

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, 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-20843
LD₅₀ orl rat : [40%] 1250 / [≥25%] >2000 mg/kg
LD₅₀ orl mus : 40 mg/kg

25 mL PO₄ -1
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 NH₄ -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%/≥0,1%, Article 57-2 (SDS required)
South Korea TCCA: Accident Precaution Chemical Yes
Korea Exist.Chem.Inventory: KE-32570
LD₅₀ orl rat : 2140 mg/kg
LD₅₀ inh rat : 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: 933100
VISOCOLOR School reagent case

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

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

Chemical: ammonia solution CAS No.: 1336-21-6
TSCA Inventory: listed California Proposition 65 List: not 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

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 fish/96h : >1000 mg/L
EC50 daphnia/48h : >1000 24h mg/L
Water hazard class (DE): 1 WGK No.: 0201
Dispersion coefficient (a/w) : 2.3
Storage class (VCI): 12

Chemical: ethanol CAS No.: 64-17-5
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
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 : [EC2] 6500 mg/L
Water hazard class (DE): 1 WGK No.: 0096
Dispersion coefficient (a/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
Chemical: **dichloroisocyanuric acid, Na salt**  
**Water hazard class (DE):** 3  
**Storage class (VCI):** 13

**25 mL PO ± -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 ± -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/48h:** >100 mg/L  
**LC50 pimephales promelas/96h:** 13400 - 15100 mg/L  
**LC50 leuciscus idus/96h:** 8140 mg/L  
**Water hazard class (DE):** 2  
**WGK No.:** 1220  
**Storage class (VCI):** 8 A

**5 g NO ± -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 ± -1**  
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 putida/16h:** ECC: >10 g/L  
**Water hazard class (DE):** 1  
**WGK No.:** 0057  
**Dispersion coefficient (o/w):** -1.72  
**Storage class (VCI):** 13

**5 g NO ± -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: ECO: >10 g/L  
Water hazard class (DE): 1  
Dispersion coefficient (a/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*  
PNEC (fresh water): 0.96 mg/L  
PNEC = Predicted No Effect Concentration  
LC50 *daphnia magna* /48h: >100 mg/L  
LC50 *pimephales promelas* /96h: 13400 - 15100 mg/L  
LC50 *leuciscus idus* /96h: 8140 mg/L  
LC50 *fish* /96h: 13 g/L  
EC50 *daphnia* /48h: 9.3-14.2 g/L  
IC50 *scenedesmus quadricauda* /72h: 5000 mg/L  
EC10 *pseudomonas putita* /16h: 6500 mg/L  
Water hazard class (DE): 1  
WGK No.: 0096  
Dispersion coefficient (a/w): -0.31  
Storage class (VCI): 3

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

**30 mL NO 2 -1**  
Chemical: *sulfanilamide*  
CAS No.: 63-74-1  
Water hazard class (DE): 1  
WGK No.: n.n.  
Storage class (VCI): 12-13

**Chemical:** *α-phosphoric acid*  
CAS No.: 7664-38-2  
LC50 *fish* /96h: 3-3.5 mg/L  
Water hazard class (DE): 1  
WGK No.: 0392  
Storage class (VCI): 8 B

**30 mL NH 4 -1**  
Chemical: *sodium hydroxide solution*  
CAS No.: 1310-73-2  
Avoid contact of substance/mixture to environment.  
LC50 *leuciscus idus* /96h: 35-189 mg/L  
LC50 *fish* /96h: 45.4 mg/L  
EC50 *daphnia* /48h: >100 mg/L  
Water hazard class (DE): 1  
WGK No.: 142  
Storage class (VCI): 8 B

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

**25 mL PO 4 -1**  
Chemical: *sulfuric acid*  
PNEC (fresh water): 2.5 µg/L  
PNEC = Predicted No Effect Concentration  
LC50 *fish* /96h: [NOEC, 65d] 25 µg/L  
EC50 *daphnia* /48h: 100 mg/L  
EC10 *pseudomonas putita* /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
Water hazard class (DE): 1  WGK No.: 0637
Storage class (VCI): 12-13

30 ml GH-2
Chemical: ethylenendinitrilo tetraacetic acid, di Na-salt (EDTA-Na)  CAS No.: 6381-92-6
PNEC (fresh water): 2.2 mg/L
LC50 fish/96h: [4d] 41-1592 mg/L
EC50 daphnia/48h: 140 mg/L
IC50 scenedesmus quadricauda/72h: [72h] 2.77-1000 mg/L
EC10 pseudomonas putita/16h: [EC10, 30h] 500 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
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
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

Air transport ICAO
Limited Quantity: LQ 4

Exceptional Quantity: E 2

Special instructions: 640C

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
Tunnel restriction code: E

Air transport ICAO
Limited Quantity: LQ 22

Exceptional Quantity: E 2

PAX: 851
max. weight PAX: 1 L

CAO: 855
max. weight CAO: 30 L

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

Air transport ICAO
Limited Quantity: LQ 22

Exceptional Quantity: E 2

PAX: 851
max. weight PAX: 1 L

CAO: 855
max. weight CAO: 30 L

14.5 Environmental hazards
none, contains only small quantities of hazardous substances, contains only small amounts of these substances

14.6 Special precautions for user
not necessary

14.7 Carriage in bulk by sea in accordance with IMO instruments
Not applicable.
SECTION 15: Regulatory information

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

- Dangerous Substances Protection Act (DE: Chemikaliengesetz - ChemG), Aug 2013, Stand: Okt 2020
- Ordinance on protection against dangerous substances (E: Gefahrstoffverordnung - GefStoffV), Nov 2010, Stand: Mrz 2017
- TRGS 201, Classification and labeling of activities involving hazardous substances, Feb 2017
- TRGS 220, National aspects when preparing safety data sheets, Jan 2017
- TRGS 400, Risk assessment for activities involving hazardous substances, Jul 2017
- TRGS 401, Skin contact hazard - identification, assessment, action, Jun 2008, status: Feb 2011
- BekGS 408, Application of the GefStoffV and the TRGS with the entry into force of the CLP regulation, December 2009, status: Jan 2012
- TRGS 500, Protective measures, Mai 2008
- TRGS 510, Storage of hazardous substances in portable containers from March 2013, status: Oct 2015
- 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 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 lactating women (f. ex. 92/85/EEC or for DE §§ 11-13 MuSchG 2017!)

An individual package of this product or test kit has a moderate hazardous potential.

16.4 Sources of key data

- KÜHN, BIRETT, Leaflets on hazardous materials, 2021
- Directive 1999/92/EG Minimum requirements to improve the safety and health protection of workers at risk from potentially explosive atmospheres
- SUVA, CH, limit values in the air at work 2009, revised on 01/2009
- Regulation 790/2009/EU, adaptation of Regulation 1272/2008/EU to technical and scientific progress (1st ATP)
- Regulation 453/2010/EU, adaptation of the REACH regulation 1907/2006/EG
- Regulation 487/2013/EU, adaptation of regulation 1272/2008/EG to technical and scientific progress (4th ATP)
- Regulation 1221/2015/EU, adaptation of regulation 1272/2008/EG to technical and scientific progress (7th ATP)
- Regulation 776/2017/EU, adaptation of regulation 1272/2008/EG to technical and scientific progress (10th ATP)
- Regulation 669/2018/EU, adaptation of Regulation 1272/2008/EC to technical and scientific progressText (11th ATP)
- Regulation 1480/2018/EU, adaptation of regulation 1272/2008/EG to technical and scientific progress (13th ATP)
- Regulation 521/2019/EU, adaptation of regulation 1272/2008/EG to technical and scientific progress (12th ATP)

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

TRGS 900, German rules of technology on limit values in the air at work, as of 03/2019
Regulation 2017/2020/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/EC
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 ECHA registration dossier
2017–11 adjustment according the Ordinance on Ethanol Denaturation 2016/1867/EU
2017–11 adjustment according Regulation 878/2020/EU

16.5 Further information
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16.6 Legend / Abbreviations
acc: according
ADR: Convention concerning the International Carriage of Dangerous Goods by Road
Act: acute
BAT: biological workplace tolerance value
CAO: Cargo Aircraft Only
Carc: carcinogen
CAS: Chemical Abstracts Service
CLP: Classification, Labelling and Packaging regulation
CMR: carcinogen, mutagen, reproduction toxic
Corr: corrosive
COD: chemical oxygen demand
CSCL: Chemical Substance Control Law (Jp)
Dam: damage
DNEL: Derived No-Effect Level (for workers)
derm: dermal
dog: dog
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
IvCAO: International Civil Aviation Organization
inh: inhaled
IMDG: International Maritime Dangerous Goods Code
intrav: intravenous
ipt: intraperitoneal
ISHL: Industrial Safety and Health Law (Jp)
LC50: letale concentration 50%
LD50: letale dosis 50%
leuciscus idus: fisch, ide, orfe
MAK: maximum workplace concentration
Met: Metall
mus: mouse
Muta: mutagen
NIOSH: National Institute for Occupational Safety and Health (US)
NRD: Non-rapidly degradable
onchorhynchus mykiss: fish, rainbow trout
orl: oral
OSHA: Occupational Safety and Health Administration
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.