MACHEREY-NAGEI



Safety Data Sheet

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

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| Printing date: 24.10.2017 | Date of issue: 14.09.2017 | |

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

1.1 **Product identifier**

REF Product name 931601 VISOCOLOR soil case, complete -New -

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

- 1 x 1 L CAL solution 1 x 100 mL CAL stock solution 1 x 500 mL dist. water 2 x 25 mL K-1 1 x 12 g K-2 1 x 30 mL P-1 1 x 30 mL P-2 1 x 100 p. folded filter papers 2 x 25 mL pH 4-10 1 x 30 mL P-K 1 x 30 mL Pyrophosphate solution 1 x 100 Test sticks Ammonium 1 x 100 Indicator sticks 1 x 100 test strips 1 x 1 L CaCl₂ solution 1 x 100 mL CaCl₂ stock solution
- 2 x 30 mL NH₄+ -1

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 Neumann-Neander-Str. 6-8, 52355 Dueren, GERMANY Tel.: +49 2421 969 0

E-mail: msds@mn-net.com

1.4 Emergency telephone number

Outside Germany (DE): Call your regional Poisons Information Service or call local Life Saving Service. DE: Gemeinsames Giftinformationszentrum (GGIZ) 99089 Erfurt tel. +49 361 730 730

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

http://www.mn-net.com/MSDS

SECTION 2: Hazard identification

2.0 Classification of the complete product



Signal word

DANGER



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| | Hazard identification | Hazard classes/categories | |
| | EUH031 | not defined | |
| | H225 | Flam. Liq. 2 | |
| | H290 H302 | Met. Corr. 1 Acute Tox. 4 | |
| | H314 | Skin Corr. 1A | |
| | H315 | Skin Cont. 12 Skin Irrit. 2 | |
| | H318 | Eye Dam. 1 | |
| | H319 | Augenreiz. 2 | |
| 2.1 | Classification of the sub | ostance or mixture | |
| | 1 L CAL solution | | |
| | | Do not need labelling as hazardous | |
| | Signal word | - | |
| | No hazard class | | |
| | 100 mL CAL stock solution | on | |
| | Signal word | Do not need labelling as hazardous | |
| | - | - | |
| | No hazard class | | |
| | 500 mL dist. water | | |
| | Circultured | Do not need labelling as hazardous | |
| | Signal word | - | |
| | No hazard class | | |
| | 25 mL K-1 | | |
| | | ^ | |
| | | | |
| | | GHS05 | |
| | | 01000 | |

| Signal word | DANGER |
|-----------------------|---------------------------|
| Hazard identification | Hazard classes/categories |
| H290 | Met. Corr. 1 |
| H314 | Skin Corr 1B |

12 g K-2



Signal word

| Hazard identification | Hazard classes/categories |
|-----------------------|---------------------------|
| H302 | Acute Tox. 4 |
| H315 | Skin Irrit. 2 |
| H319 | Eye Irrit. 2 |



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|--|--|-----------|
| 30 mL P-1 | | |
| | ^ | |
| | | |
| | GHS05 | |
| Signal word | DANGER | |
| Hazard identification | Hazard classes/categories | |
| H290 H314 | Met. Corr. 1 Skin Corr. 1A | |
| 30 mL P-2 | | |
| | | |
| | | |
| | GHS05 | |
| Signal word | DANGER | |
| Hazard identification | Hazard classes/categories | |
| EUH031 H318 | not defined Eye Dam. 1 | |
| 100 p. folded filter papers | | |
| | Do not need labelling as hazardous | |
| Signal word No hazard class | - | |
| 25 mL pH 4-10 | | |
| p | | |
| | | |
| | | |
| Signal word | GHS02 DANGER | |
| Hazard identification | Hazard classes/categories | |
| H225 | Flam. Liq. 2 | |
| 30 mL P-K | | |
| | ~ | |
| | | |
| | GHS05 | |
| Signal word | DANGER | |
| Hazard identification | Hazard classes/categories | |
| H314 | Skin Corr. 1A | |



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|--|--|-----------|
| 30 mL Pyrophosphate solution | n | |
| Signal word | Do not need labelling as hazardous - | |
| No hazard class | | |
| 100 Test sticks Ammonium | | |
| Signal word | Do not need labelling as hazardous - | |
| No hazard class | | |
| 100 Indicator sticks | | |
| Signal word | Do not need labelling as hazardous - | |
| No hazard class | | |
| 100 test strips | | |
| Signal word | Do not need labelling as hazardous - | |
| No hazard class | | |
| 1 L CaCl ₂ solution | | |
| Signal word | Do not need labelling as hazardous - | |
| No hazard class | | |
| 100 mL CaCl ₂ stock solution | | |
| | | |
| | GHS07 | |
| Signal word | WARNING | |
| Hazard identification | Hazard classes/categories | |
| H319 | Augenreiz. 2 | |
| 30 mL NH ₄ + -1 | | |
| | | |
| | GHS05 | |
| Signal word | DANGER | |
| Hazard identification | Hazard classes/categories | |
| H290 H314 | Met. Corr. 1 Skin Corr. 1A | |

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2.2 Label elements

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

Harmful chemicals/mixtures with signal word: WARNING and highly flammable chemicals/mixtures must not be labelled with H and P phrases until 125 mL (EU 1272/2008 Annex I - 1.5.2).

1 L CAL solution

Do not need labelling as hazardous Signal word: -

100 mL CAL stock solution

Do not need labelling as hazardous Signal word: -

500 mL dist. water

Do not need labelling as hazardous Signal word: -

25 mL K-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.

12 g K-2



Signal word: WARNING

30 mL P-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.



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30 mL P-2



Signal word: DANGER

H318

Causes serious eye damage.

P280sh, P305+351+338, P310 Wear protective gloves/eye protection. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact

lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.

100 p. folded filter papers

Do not need labelling as hazardous Signal word: -

25 mL pH 4-10



30 mL P-K



Signal word: DANGER

H314

Causes severe skin burns and eye damage.

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

Do not breathe dust/vapours. Wear protective gloves/eye protection. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower]. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.

30 mL Pyrophosphate solution

Do not need labelling as hazardous Signal word: -

100 Test sticks Ammonium

Do not need labelling as hazardous Signal word: -

100 Indicator sticks

Do not need labelling as hazardous Signal word: -

100 test strips

Do not need labelling as hazardous

(MN)

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Signal word: -

1 L CaCl₂ solution

Do not need labelling as hazardous Signal word: -

100 mL CaCl₂ stock solution



Signal word: WARNING





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. In the case of pH values are less than 5 or higher than 9 then it is irritant. Flammable properties. Vapour forms explosive mixtures with air. H290 "May be corrosive to metals." has only relevance for higher concentrations and larger amounts. The labelling GHS05 would be creating an "OVERLABELLING" (see GHS Directive 1272/2008/EC Annex I, chapter 1.5.2.1.3., until 125 mL no labelling necessary).

Information pertaining to particular risks to human and possible symptoms

Causes varying degrees of acid burns on the skin, to the eyes and to the mucous membranes and wounds which do not heal quickly depending on the concentration, temperature and the exposure time. Vapours especially which steam from hot liquids and mist can have a severe irritant effect upon the eyes and the respiratory organs. Cause after oral intake, impairments of health when ingested in small quantities. Can accumulate within the body.

Information pertaining to particular risks to the environment

| | of substance/mixture to environment. |
|-------|--------------------------------------|
| PBT: | not applicable |
| vPvB: | not applicable |

Other hazards

Contains an odor intensive reagent. ---

SECTION 3: Composition/information on ingredients

3.1 Substances or 3.2 Mixtures

1 L CAL solution



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| | Formula: | m acetate Ca(CH ₃ COO) ₂ | | CAS No.: 62-54-4 | |
| | Pseudonym: REACH Reg. No.: EC No.: | Acetic acid, calcium salt (2:1) 01-2119987569-11-xxxx 2007524599080 ECS: | MFCD: | 00012448 | |
| | TSCA Inventory: Concentration: acc. CLP (GHS): | listed < 1,00 % The criteria for classification are not fulfilled. | | | |
| | Chemical: acetic | acid | | CAS No.: 64-19-7 | |
| | Formula: | $C_2 H_4 O_2$ | | | |
| | REACH Reg. No.: | 01-2119475328-30-xxxx | Indice No.: | 607 002 00 6 | |
| | EC No.: RTECS: | 200-580-7 AF1225000 | MFCD: | 607-002-00-6 00036152 | |
| | TSCA Inventory: | listed | MFCD. | 00030132 | |
| | KE No.: | KE-00013 | | | |
| | Concentration: | 1 - <10 % | | | |
| | acc. CLP (GHS): | The criteria for classification are not fulfilled. | | | |
| | · · · · · · | | | | |
| 100 ml | L CAL stock solution Chemical: calciu | m acetate | | CAS No.: 62-54-4 | |
| | Formula: | Ca(CH ₃ COO) ₂ | | | |
| | Pseudonym: | Acetic acid, calcium salt (2:1) | | | |
| | REACH Reg. No.: | 01-2119987569-11-xxxx | | | |
| | EC No.: | 20707-5245099RCTECS: | MFCD: | 00012448 | |
| | TSCA Inventory: | listed | | | |
| | Concentration: | 1 - <10 % | | | |
| | acc. CLP (GHS): | The criteria for classification are not fulfilled. | | | |
| | Chemical: acetic | | | CAS No.: 64-19-7 | |
| | Formula: | C ₂ H ₄ O ₂ | | | |
| | REACH Reg. No.: | 01-2119475328-30-xxxx | Indice No.: | 607 002 00 6 | |
| | EC No.: RTECS: | 200-580-7 AF1225000 | MFCD: | 607-002-00-6 00036152 | |
| | TSCA Inventory: | listed | MFCD. | 00030132 | |
| | KE No.: | KE-00013 | | | |
| | Concentration: | 1 - <10 % | | | |
| | acc. CLP (GHS): | The criteria for classification are not fulfilled. | | | |
| 500 ml | L dist. water | | | | |
| 500 m | Chemical: water | | | CAS No.: 7732-18-5 | |
| | Formula: | H ₂ O | | | |
| | REACH Reg. No.: | exempt, Annex IV | | | |
| | EC No.: | ZSECT 9002RTECS:Inventory: | | | |
| | KE No.: | KE-35400 | | | |
| | Concentration: acc. CLP (GHS): | 90 - <100 % The criteria for classification are not fulfilled. | | | |
| | | | | | |
| 25 mL | | m hydroxide solution | | CAS No.: 1310-73-2 | |
| | Formula: | NaOH•H2 O | | | |
| | Pseudonym: | soda lye | | | |
| | REACH Reg. No.: | 01-2119457892-27-xxxx | | | |
| | EC No.: | 215-185-5 | Indice No.: | 011-002-00-6 | |
| | RTECS: | Ws Est900000TSCA Inventory: | | | |
| | KE No.: | KE-31487 | | | |
| | Concentration: | 2 - <5 % | | | |
| | acc. CLP (GHS): | H290, H314 | | | |
| 12 g K | -2 | | | | |
| 12 y K | - | | | | |

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| Printing date: 24.10.20 |)17 | Date of issue: 14.0 | 9.2017 | | |
| | Chemical: sodiu | n tetraphenylborate | | CAS No.: 143-66-8 | |
| | Formula: | C ₂₄ H ₂₀ BNa | | CAS NO.: 143-00-0 | |
| | EC No.: | 2033862550RTECS: | MFCD: | 00011494 | |
| | TSCA Inventory: | listed | | | |
| | KE No.: | KE-31629 | | | |
| | Concentration: | 14 - <35 % | Correlation facto | r: x 0.032 (= %B) | |
| | acc. CLP (GHS): | H302, H315, H319 | | | |
| 30 mL | P-1 | | | | |
| •••••= | | onium heptamolybdate | | CAS No.: 12054-85-2 | |
| | Formula: | H ₂₄ Mo ₇ N ₆ O ₂₄ | | | |
| | Pseudonym: | ammonium molybdate | | | |
| | EC No.: | 23450220007EDASt900000 | MFCD: | 00167059 | |
| | TSCA Inventory: | listed (CAS 11098-84-3) | | | |
| | KE No.: | not listed | | 0.50 / 0/14 > | |
| | Concentration: | 1 - <5 % | | r: x 0.58 (= %Mo) | |
| | acc. CLP (GHS): | The criteria for classification are not fulfil | ed. | | |
| | Chemical: sulfur | ic acid | | CAS No.: 7664-93-9 | |
| | Formula: | H ₂ SO ₄ | | | |
| | REACH Reg. No.: | 01-2119458838-20-xxxx | | | |
| | EC No.: | 231-639-5 | Indice No.: | 016-020-00-8 | |
| | RTECS: | WS 65600000TSCA Inventory: | | | |
| | KE No.: Concentration: | KE-32570, >10% Toxic 97-1-40 15 - <30 % | 5, Acc. Precaution Ch | em. | |
| | acc. CLP (GHS): | H290, H314 | | | |
| | | | | | |
| 30 mL | | n diaulfita | | CAS No : 7691 57 4 | |
| | Formula: | n disulfite | | CAS No.: 7681-57-4 | |
| | Pseudonym: | Na ₂ O ₅ S ₂ sodium metabisulphite, sodium | ovroculfite | | |
| | REACH Reg. No.: | 01-2119531326-45-xxxx | byrosume | | |
| | EC No.: | 231-673-0 | Indice No.: | 016-063-00-2 | |
| | RTECS: | Lister 225000TSCA Inventory: | | 010 000 00 2 | |
| | KE No.: | KE-12701 | | | |
| | Concentration: | 10 - <25 % | | | |
| | acc. CLP (GHS): | H318, EUH031 | | | |
| 100 | | | | | |
| 100 p. 1 | folded filter papers Chemical: filter p | aper (cellulose CAS 9004-34-6) | | CAS No.: - | |
| | Formula: | $(C_6 H_{10} O_5)_n$ | | 0,10,110 | |
| | REACH Reg. No.: | exempt, Annex IV | | | |
| | EC No.: | ESECTION STREET STREET | | | |
| | KE No.: | KE-05339 | | | |
| | Concentration: | 80 - <100 % | | | |
| | acc. CLP (GHS): | The criteria for classification are not fulfil | ed. | | |
| 25 ml | pH 4-10 | | | | |
| 23 IIIL | | l red (pH indicator) | | CAS No.: 493-52-7 | |
| | Formula: | C ₁₅ H ₁₅ N ₃ O ₂ | | | |
| | Pseudonym: | 4-(dimethylamino)-azobenzene- | 1,2'-carbonic acid | | |
| | EC No.: | 202789660008TECS: | MFCD: | 00002425 | |
| | TSCA Inventory: | listed | | | |
| | KE No.: | KE-06693 | | | |
| | Concentration: | < 1,00 % | | | |
| | acc. CLP (GHS): |) = - | | | |



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| | Chemical: ethan | ol | | CAS No.: 64-17-5 | |
| | | atured with 1%IPA/1%MEK, acc.2016/ | 1867/EU) | | |
| | Formula: Pseudonym: | C ₂ H ₆ O ethyl alcohol, methylated spirit | | | |
| | REACH Reg. No.: | 01-2119457610-43-xxxx | | | |
| | EC No.: | 200-578-6 | Indice No.: | 603-002-00-5 | |
| | RTECS: | KQ6300000 | MFCD: | 00003568 | |
| | TSCA Inventory: | listed | | | |
| | KE No.: Concentration: | KE-13217 90 - <98 % | | | |
| | acc. CLP (GHS): | H225 | | | |
| | · · · · | | | | |
| | Chemical: pheno Formula: | olphthaleine (pH indicator) | | CAS No.: 77-09-8 | |
| | Pseudonym: | C ₂₀ H ₁₄ O ₄ 3,3-bis(4-hydroxyphenyl)-1(3H)-isot | penzofuranone | | |
| | REACH Reg. No.: | 01-2119498295-24-0000 | | | |
| | SVHC listed: | YES (> 1%) | | | |
| | EC No.: | 201-004-7 | Indice No.: | 604-076-00-1 | |
| | RTECS: TSCA Inventory: | SM8380000 listed | MFCD: | 00005913 | |
| | KE No.: | KE-03234 | | | |
| | Concentration: | 0,01 - <0,1 % | | | |
| | acc. CLP (GHS): | The criteria for classification are not fulfilled. | | | |
| | Chemical: indica | tor dye(s) | | CAS No.: - | |
| | TSCA Inventory: | all listed, <1% | | | |
| | Concentration: | 0,01 - <0,1 % | | | |
| | acc. CLP (GHS): | The criteria for classification are not fulfilled. | | | |
| 30 mL | P-K | | | | |
| oo me | | ic acid | | CAS No.: 7664-93-9 | |
| | Formula: | H ₂ SO ₄ | | | |
| | REACH Reg. No.: | 01-2119458838-20-xxxx | Indiaa Na i | 016 000 00 0 | |
| | EC No.: RTECS: | 231-639-5 N/st&5600000TSCA Inventory: | Indice No.: | 016-020-00-8 | |
| | KE No.: | KE-32570, >10% Toxic 97-1-405, A | cc. Precaution Chem. | | |
| | Concentration: | 30 - <51 % | | | |
| | acc. CLP (GHS): | H314 | | | |
| 30 ml | Pyrophosphate solut | lion | | | |
| oo me | | hate buffer solution | | CAS No.: - | |
| | Formula: | Me ₁₋₃ H ₂₋₀ PO ₄ •H ₂ O | | | |
| | TSCA Inventory: | all listed | | | |
| | KE No.: Concentration: | listed 1 - <5 % | | | |
| | acc. CLP (GHS): | The criteria for classification are not fulfilled. | | | |
| | · · · | | | | |
| 100 Te | st sticks Ammonium | | | OAO NI 7700 00 7 | |
| | Chemical: potas Formula: | sium tetraiodomercurate(II) K ₂ (Hgl ₄) | | CAS No.: 7783-33-7 | |
| | EC No.: | 231-990-4-8 | Indice No.: | 080-004-00-7 | |
| | RTECS: | Date: 670000TSCA Inventory: | | | |
| | KE No.: | KE-12197, Toxic 97-1-140 | | | |
| | Concentration: | < 0,10 % | Correlation factor: x (| J.26 (= %Hg) | |
| | acc. CLP (GHS): | The criteria for classification are not fulfilled. | | | |
| | | paper (cellulose CAS 9004-34-6) | | CAS No.: - | |
| | Formula: | $(C_6 H_{10} O_5)_n$ | | | |
| | REACH Reg. No.: | exempt, Annex IV | | | |
| | • | | | | |
| | EC No.: | Estads7/44-90RTSEC/SInventory: KE-05339 | | | |
| | • | EStBd97/44-96715£C2/S Inventory: KE-05339 1 - <10 % | | | |



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| EF: 931601 | 47 | | oil case,complete -New - | | Page: 11/ |
|------------------------|--|---|--------------------------|---------------------|-----------|
| rinting date: 24.10.20 | 117 | Date of issue: 1 | 14.09.2017 | | |
| | Chemical: PVC | foil (CAS 9002-86-2) | | CAS No.: - | |
| | TSCA Inventory: | listed | | | |
| | Concentration: | 95 - <100 % | | | |
| | acc. CLP (GHS): | The criteria for classification are not f | fulfilled. | | |
| 100 Ind | icator sticks | | | | |
| | Chemical: <i>cellul</i> | ose | | CAS No.: 9004-34-6 | |
| | Formula: | (C ₆ H ₁₀ O ₅) _n | | | |
| | REACH Reg. No.: | exempt, Annex IV | | | |
| | EC No.: | ESIEGS744-ORTISEC/Sinventory: | | | |
| | KE No.: | KE-05339 | | | |
| | Concentration: | 1 - <10 % | | | |
| | acc. CLP (GHS): | The criteria for classification are not f | fulfilled. | | |
| | | ator dye(s) | | CAS No.: - | |
| | TSCA Inventory: | all listed, <1% | | | |
| | Concentration: | 0,01 - <0,1 % | | | |
| | acc. CLP (GHS): | The criteria for classification are not f | fulfilled. | | |
| | | foil (CAS 9002-86-2) | | CAS No.: - | |
| | TSCA Inventory: | listed | | | |
| | Concentration: | 95 - <100 % | | | |
| | acc. CLP (GHS): | The criteria for classification are not f | fulfilled. | | |
| 100 tes | t strips | | | | |
| | Chemical: cellul | ose | | CAS No.: 9004-34-6 | |
| | Formula: | (C ₆ H ₁₀ O ₅) _n | | | |
| | REACH Reg. No.: | exempt, Annex IV | | | |
| | EC No.: | ESIEGS7141-SORTISEC/Sinventory: | | | |
| | KE No.: | KE-05339 | | | |
| | Concentration: | 1 - <10 % | | | |
| | acc. CLP (GHS): | The criteria for classification are not f | fulfilled. | | |
| | Chemical: chem | icals/mixture < 1%, no declarati | ion necessary | CAS No.: - | |
| | TSCA Inventory: | all listed, <1% | | | |
| | KE No.: | listed | | | |
| | Concentration: | 0,1 - <1 % | | | |
| | acc. CLP (GHS): | The criteria for classification are not f | fulfilled. | | |
| | | foil (CAS 9002-86-2) | | CAS No.: - | |
| | TSCA Inventory: | listed | | | |
| | Concentration: | 95 - <100 % | | | |
| | acc. CLP (GHS): | The criteria for classification are not f | fulfilled. | | |
| 11 Ca(| Cl ₂ solution | | | | |
| . 2 04 | | ım chloride (dihydrate) | | CAS No.: 10035-04-8 | |
| | Formula: | CaCl ₂ •2H ₂ Ó | | | |
| | REACH Reg. No.: | 01-2119494219-28-xxxx | | | |
| | EC No.: | 233-140-8 | Indice No.: | 017-013-00-2 | |
| | RTECS: | EV9810000 | MFCD: | 00149613 | |
| | TSCA Inventory: | listed (CAS 10043-52-4) | | | |
| | KE No.: | KE-04496 | | | |
| | Concentration: acc. CLP (GHS): | < 10,00 % | fulfilled | | |
| | $\mathbf{u}_{\mathbf{U}}, \mathbf{U}_{\mathbf{U}} \in (\mathbf{U}_{\mathbf{U}}, \mathbf{U}_{\mathbf{U}}).$ | The criteria for classification are not f | rumiea. | | |
| 100 mL | CaCl ₂ stock solutio | n | | | |
| | | ım chloride (dihydrate) | | CAS No.: 10035-04-8 | |
| | Formula: | $CaCl_2 \cdot 2H_2 O$ | | | |
| | REACH Reg. No.: | 01-2119494219-28-xxxx | lunalis - NI- | 017 010 00 0 | |
| | EC No.: | 233-140-8 | Indice No.: | 017-013-00-2 | |
| | RTECS: | EV9810000 | MFCD: | 00149613 | |
| | TSCA Inventory: | listed (CAS 10043-52-4) | | | |
| | KE No.: Concentration: | KE-04496 10 - <20 % | | | |
| | Concentration: acc. CLP (GHS): | H319 | | | |
| | | | | | |

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| REF: 931601 | | VISOCOLOR soil of | ase,complete -New - | | Page: 12/28 |
|------------------------|---|---|---------------------|--------------------|-------------|
| Printing date: 24.10.2 | 2017 | Date of issue: 14.0 | 9.2017 | | |
| 30 mL | . NH4+ -1 | | | | |
| | • | m hydroxide solution NaOH•H₂ O soda lye 01-2119457892-27-xxxx | | CAS No.: 1310-73-2 | |
| | EC No.: RTECS: KE No.: Concentration: acc. CLP (GHS): | 215-185-5 Ws&e 00000TSCA Inventory: KE-31487 20 - <35 % H290, H314 | Indice No.: | 011-002-00-6 | |

3.3 Remarks

When not listed, mixtures are added with water [CAS No. 7732-18-5] to 100%.

List of H and P phrases: see section 16.1

SECTION 4: First aid measures

4.1 Description of first aid measures

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

4.1.1 After SKIN Contact

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

4.1.2 After EYE Contact

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

After INHALATION of vapours 4.1.3

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

Avoid inhalation of dust. Can accumulate within the body. --

4.3 Indication of any immediate medical attention and special treatment needed

CORROSIVE DAMAGE: After SKIN CONTACT rinse with water for a long time. Efforts to neutralise the substance can frequently make matters worse. Apply glucocorticosteroides following inflammatory reactions. After EYE CONTACT rinse immediately with plenty of water for a long time. Eyelid convulsion measures. Name the corrosive chemical. Further treatment must to be carried out by an eye specialist. After INTAKÉ 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

Fire extinguishers appropriate to the fire classification, and, if applicable, a fire blanket must be available in a prominent location in the work area. All extinguishers like FOAM, WATER SPRAY, DRY POWDER, CARBON DIOXIDE can be used.

5.2 Special hazards arising from the substance or mixture

DANGER: Highly flammable (GHS regulation). Forms explosive vapour-air mixtures. Formation of hazardous and caustic vapour-air mixtures possible. -

5.3 Advice for firefighters

No, for listed product. Product package burns like paper or plastic. Spray any vapours released with water. Retent fire water. Use only acid-resistant safety equipment.

For great amount - if necessary - protective breathing apparatus which is independent of the ambient air (isolated equipment), and sealed protective clothing is necessary in the event of a large-scale formation of toxic substances.



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5.4 Additional information

Danger for environment only in the event of a large-scale leakage or formation of hazardous substances. ---

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Do not breathe vapours. Wear suitable protective gloves (see 8.2.2). Wear eye protection, respectively face protection. Regular staff training is necessary, indicating hazards and precautions on the basis of operating instructions. Restrictions on activity must be observed.

6.2 **Environmental precautions**

not necessary

6.3 Methods and material for containment and cleaning up

Bind any escaping liquid with inert absorbent. And dispose in accordance to local regulations for the disposal of hazardous chemicals. Clean any contaminated equipment and floors with plenty of water. Collect small amounts of leaked liquid and flush with water into drains.

6.4 Reference to other sections

see information in section 5.4 ---

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Handling in accordance with the test instruction, that comes with the product.

| Conditions for safe storage, including any incompatibilities | | | | | |
|--|---|--|--|--|--|
| The original product package of MACHE | REY-NAGEL allows a safe storage. | | | | |
| Storage class (VCI): | 3 | | | | |
| Water hazard class (DE): | 3 | | | | |
| | The original product package of MACHEI Storage class (VCI): | | | | |

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**

| 1 L CAL solution | 4 | CAC No - CO 54 4 | |
|--|--|-------------------------------------|-------|
| Chemical: calcium aceta | te | CAS No.: 62-54-4 | |
| Chemical: <i>acetic acid</i> EU value: TRGS 900 (DE): | [TWA] 25 / [STEL] 50 mg/m³ 10 mL/m³ / 25 mg/m³ E/e respirable | CAS No.: 64-19-7 | |
| Short-term exposure factor: skin resorptive (H), respin | 2(I), Y ratory sensitizable (Sa), skin sensitizable (Sh), teratogenic (Z) not securely | / excluded / (Y) certainly excluded | |
| SUVA(CH) MAK value: NIOSH: [TWA] Time-weighted ave | 10 ppm / 25 mg/m³ [TWA] 10 ppm / 25 mg/m³ ; [STEL] 15 ppm / 37 mg/m³ rage to a reference period of 8 hours, [STEL] Short-term exposure limit rel | ated to a 15-minute period | |
| OSHA: | [TWA] 10 ppm / 25 mg/m ³ | | |
| 100 mL CAL stock solution Chemical: <i>calcium aceta</i> | | CAS No.: 62-54-4 | |
| Chemical: <i>acetic acid</i> EU value: TRGS 900 (DE): | [TWA] 25 / [STEL] 50 mg/m³ 10 mL/m³ / 25 mg/m³ E/e respirable | CAS No.: 64-19-7 | |
| Short-term exposure factor: skin resorptive (H), respin | 2(I), Y ratory sensitizable (Sa), skin sensitizable (Sh), teratogenic (Z) not securely | / excluded / (Y) certainly excluded | |
| SUVA(CH) MAK value: NIOSH: [TWA] Time-weighted ave | 10 ppm / 25 mg/m ³ [TWA] 10 ppm / 25 mg/m ³ ; [STEL] 15 ppm / 37 mg/m ³ rage to a reference period of 8 hours, [STEL] Short-term exposure limit rel | ated to a 15-minute period | |
| OSHA: | [TWA] 10 ppm / 25 mg/m³ | | |
| | | | www.m |



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| C 2 C D T S S N 0 11 | 00 mL dist. Chemical: 5 mL K-1 Chemical: DNEL: DNEL: CRGS 900 (E Short-term e) skin re SUVA(CH) M IIOSH: | water sodium hydrox Derived No-Effect DE): coposure factor: sorptive (H), respir AK value: | [inh] 1 mg/m ³ Level (for workers) 2 mg/m ³ E/e respirable (=1=, Y) atory sensitizable (Sa), skin sensitizable (Sf 2 e mg/m ³ 2 mg/m ³ age to a reference period of 8 hours, [STEL [TWA] 2 mg/m ³ | CAS No.: 7732-18-5 CAS No.: 1310-73-2 h), teratogenic (Z) not securely excluded / (Y) certainly excluded |
|---|---|--|---|---|
| C 2 C D T S S N 0 11 | Shemical: 5 mL K-1 Chemical: DNEL: DNEL = CRGS 900 (E Short-term ex- skin re SUVA(CH) M IIOSH: [TWA] - DSHA: 2 g K-2 Chemical: 0 mL P-1 | water sodium hydrox Derived No-Effect DE): coposure factor: sorptive (H), respir AK value: Fime-weighted aver | [inh] 1 mg/m ³ Level (for workers) 2 mg/m ³ E/e respirable (=1=, Y) atory sensitizable (Sa), skin sensitizable (Sf 2 e mg/m ³ 2 mg/m ³ age to a reference period of 8 hours, [STEL [TWA] 2 mg/m ³ | CAS No.: 1310-73-2 h), teratogenic (Z) not securely excluded / (Y) certainly excluded |
| C D T S N O 11: | Chemical: DNEL: DNEL = DNEL = CRGS 900 (E Chort-term ex- skin re SUVA(CH) M IIOSH: [TWA] - DSHA: 2 g K-2 Chemical: 0 mL P-1 | Derived No-Effect DE): sorptive (H), respir AK value: Fime-weighted aver | [inh] 1 mg/m ³ Level (for workers) 2 mg/m ³ E/e respirable (=1=, Y) atory sensitizable (Sa), skin sensitizable (Sf 2 e mg/m ³ 2 mg/m ³ age to a reference period of 8 hours, [STEL [TWA] 2 mg/m ³ | h), teratogenic (Z) not securely excluded / (Y) certainly excluded |
| C D T S N O 11: | Chemical: DNEL: DNEL = DNEL = CRGS 900 (E Chort-term ex- skin re SUVA(CH) M IIOSH: [TWA] - DSHA: 2 g K-2 Chemical: 0 mL P-1 | Derived No-Effect DE): sorptive (H), respir AK value: Fime-weighted aver | [inh] 1 mg/m ³ Level (for workers) 2 mg/m ³ E/e respirable (=1=, Y) atory sensitizable (Sa), skin sensitizable (Sf 2 e mg/m ³ 2 mg/m ³ age to a reference period of 8 hours, [STEL [TWA] 2 mg/m ³ | h), teratogenic (Z) not securely excluded / (Y) certainly excluded |
| s s N 0 | RGS 900 (E Short-term e> skin re GUVA(CH) M IIOSH: [TWA] ⁻ DSHA: 2 g K-2 Chemical: 0 mL P-1 | DE): sorptive (H), respir AK value: Fime-weighted aver | 2 mg/m ³ E/e respirable (=1=, Y) atory sensitizable (Sa), skin sensitizable (Sk 2 e mg/m ³ 2 mg/m ³ age to a reference period of 8 hours, [STEL [TWA] 2 mg/m ³ | |
| S N O 1: | skin re SUVA(CH) M IIOSH: [TWA] DSHA: 2 g K-2 Chemical: 0 mL P-1 | sorptive (H), respir AK value: Fime-weighted aver | (=1=, Y) atory sensitizable (Sa), skin sensitizable (Sh 2 e mg/m ³ 2 mg/m ³ age to a reference period of 8 hours, [STEL [TWA] 2 mg/m ³ | |
| N 0 1: | SUVA(CH) M IIOSH: [TWA] ⁻ DSHA: 2 g K-2 Chemical: 0 mL P-1 | AK value: Fime-weighted aver | 2 e mg/m ³ 2 mg/m ³ age to a reference period of 8 hours, [STEL [TWA] 2 mg/m ³ | |
| 1: | 2 g K-2 Chemical: 0 mL P-1 | sodium tetrapl | | |
| | Chemical: 0 mL P-1 | sodium tetrapl | a an ulbarrata | |
| C C | | | lenyiborale | CAS No.: 143-66-8 |
| С | RGS 900 (E | <i>ammonium he</i> E): | <i>ptamolybdate</i> 5 _{Mo} E mg/m³ E/e respirable | CAS No.: 12054-85-2 |
| S | SUVA(CH) M | AK value: | 5 _{Mo} e mg/m ³ | |
| | hemical: | sulfuric acid | | CAS No.: 7664-93-9 |
| | U value: RGS 900 (D | 9E): | 0.1 e mg/m ³ 0.1 E mg/m ³ E/e respirable | |
| S | | posure factor: | 1 (I), Y | h), teratogenic (Z) not securely excluded / (Y) certainly excluded |
| | UVA(CH) M IIOSH: | AK value: | 0,1 e mg/m ³ NTP Report on Carcinogens (RoC | C) List Yes (Known to be a human carcinogen); [TWA] 1 mg/m³ J Short-term exposure limit related to a 15-minute period |
| C | SHA: | nine-weighted aver | [TWA] 1 mg/m ³ | |
| 3 | 0 mL P-2 | | | |
| | hemical: NEL: | sodium disulfit | e 225 _{inh} mg/m³ | CAS No.: 7681-57-4 |
| | DNEL = | | Level (for workers) | |
| 1 | RGS 900 (E | ′⊂). | - E/e respirable | |
| | UVA(CH) M IIOSH: | | 5 e mg/m³ TWA 5 mg/m³ | |
| C | [twa] SHA: | Time-weighted aver | age to a reference period of 8 hours, [STEL none |] Short-term exposure limit related to a 15-minute period |
| 1' | 00 p. folded | l filter papers | | |
| С | hemical: RGS 900 (D | filter paper (ce | <i>llulose CAS 9004-34-6)</i> 1.25 A / 4 E mg/m³ ^{E/e} respirable | CAS No.: - |
| | UVA(CH) M IIOSH: | AK value: | 3 a mg/m³ not listed | |
| | | Fime-weighted aver | | .] Short-term exposure limit related to a 15-minute period |
| | 5 mL pH 4- Chemical: | 10 methyl red (pF | l indicator) | CAS No.: 493-52-7 |
| | | | | |
| | NEL: | ethanol | 950 _{inh-sys} mg/m³ Level (for workers) | CAS No.: 64-17-5 |
| Р | | | 0.96 mg/L cted Concentration | |
| | FNEU : | - medicied NO Effe | | www.mn-ne |



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| REF: 931601 | | | VISOCOLOR soil case,complete -New - | Page: 15/28 |
|----------------|---------------------------------|--|--|--|
| Printing date: | 24.10.2017 | | Date of issue: 14.09.2017 | 1 495. 10/20 |
| | | | | |
| | TRGS 900 (E | , | 500 mL/m³ / 960 mg/m³ E/e respirable | |
| | | xposure factor: sorptive (H), respira | 2 (II), Y atory sensitizable (Sa), skin sensitizable (Sh), teratogenic (Z) not securely | excluded / (Y) certainly excluded |
| | SUVA(CH) N NIOSH: | IAK value: | 500 ppm / 960 mg/m³ [TWA] 1000 ppm / 1900 mg/m³ | |
| | [TWA] | Time-weighted avera | age to a reference period of 8 hours, [STEL] Short-term exposure limit rela | ated to a 15-minute period |
| | OSHA: | | [TWA] 1000 ppm / 1900 mg/m ³ | |
| | Chemical: NIOSH: | phenolphthalei | ne (pH indicator) not listed, NTP Report on Carcinogens (RoC) List Yes (Re | CAS No.: 77-09-8 easonably anticipated to be a human |
| | carcinogen) [TWA] | Time-weighted avera | age to a reference period of 8 hours, [STEL] Short-term exposure limit rela | ated to a 15-minute period |
| | OSHA: | | not listed | |
| | Chemical: | indicator dye(s |) | CAS No.: - |
| | 30 mL P-K | | | |
| | Chemical: EU value: | sulfuric acid | 0.1 e mg/m ³ | CAS No.: 7664-93-9 |
| | TRGS 900 (E | DE): | 0.1 E mg/m ³ E/e respirable | |
| | | cposure factor: | 1 (I), Y atory sensitizable (Sa), skin sensitizable (Sh), teratogenic (Z) not securely | excluded / (Y) certainly excluded |
| | SUVA(CH) N | | 0,1 e mg/m ³ | |
| | NIOSH: [TWA] | Time-weighted avera | NTP Report on Carcinogens (RoC) List Yes (Known to be age to a reference period of 8 hours, [STEL] Short-term exposure limit rela | a human carcinogen); [TWA] 1 mg/m ³ ated to a 15-minute period |
| | OSHA: | | [TWA] 1 mg/m ³ | |
| | 30 mL Pyrop Chemical: | phosphate solut phosphate bufi | | CAS No.: - |
| | | ks Ammonium | | |
| | Chemical: EU value: | potassium tetra | aiodomercurate(II) 0.02 _{Hg} e mg/m³ | CAS No.: 7783-33-7 |
| | TRGS 900 (E | DE): | 0,02 _{Hg} E mg/m ³ E/e respirable | |
| | | cposure factor: | 8 (II), H, Sh atory sensitizable (Sa), skin sensitizable (Sh), teratogenic (Z) not securely | excluded / (Y) certainly excluded |
| | SUVA(CH) M | IAK value: | 0,1 e mg/m ³ | |
| | SUVA(CH) B TRGS 903 (E | | Krea U/d 35 µg/L U/a 25 _{Kreatinin} µg/L | |
| | NIOSH: | , | B blood, U urine, b end of exposition or shift Hg Vapor: TWA _{skin} 0.05; other 0.1 mg/m ³ | |
| | [TWA] | Time-weighted avera | age to a reference period of 8 hours, [STEL] Short-term exposure limit rela | ated to a 15-minute period |
| | OSHA: | | TWA 0.1 mg/m ³ | |
| | Chemical: TRGS 900 (E | | <i>llulose CAS 9004-34-6)</i> 1.25 A / 4 E mg/m ³ E/e respirable | CAS No.: - |
| | SUVA(CH) N | IAK value: | 3 a mg/m³ | |
| | | Time-weighted avera | not listed age to a reference period of 8 hours, [STEL] Short-term exposure limit relation | ated to a 15-minute period |
| | OSHA: Chemical: | PVC foil (CAS | | CAS No.: - |
| | Onernical. | | 3002 00 2) | |
| | 100 Indicato Chemical: | r sticks cellulose | | CAS No.: 9004-34-6 |
| | TRGS 900 (E | | Staub 1.25 A / 4 E mg/m³ E/e_respirable | |
| | SUVA(CH) M | IAK value: | 3 a ppm | |
| | NIOSH: [TWA] | Time-weighted avera | TWA 10 (total) / 5 (resp) mg/m ³ age to a reference period of 8 hours, [STEL] Short-term exposure limit rela | ated to a 15-minute period |
| | OSHA: | | TWA 15 (total) / 5 (resp) mg/m³ | |
| | | | | |
| | | | | MANA mp_pot |

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| REF: 931601 Printing date: | | | VISOCOLOR soil case,comple Date of issue: 14.09.2017 | ete -New - Page: 16/28 |
|-------------------------------|--|---|---|--|
| Ē | Chamical | indiantar dua | | |
| | Chemical: | indicator dye | | CAS No.: - |
| | Chemical: | PVC foil (CA | S 9002-86-2) | CAS No.: - |
| | 100 test str Chemical: TRGS 900 (| . cellulose | Staub 1.25 A / 4 E mg/m³ | CAS No.: 9004-34-6 |
| | SUVA(CH) NIOSH: | MAK value: | E/e respirable 3 a ppm TWA 10 (total) / 5 (resp) mg/m ³ rerage to a reference period of 8 hours, [STEL] Short-term ex | xposure limit related to a 15-minute period |
| | OSHA: | | TWA 15 (total) / 5 (resp) mg/m³ | |
| | Chemical: | chemicals/m | ixture < 1%, no declaration necessary | CAS No.: - |
| | Chemical: | PVC foil (CA | S 9002-86-2) | CAS No.: - |
| | 1 L CaCl ₂ s Chemical: | | ride (dihydrate) | CAS No.: 10035-04-8 |
| | 100 mL Ca Chemical: | Cl ₂ stock solut calcium chlo | t ion ride (dihydrate) | CAS No.: 10035-04-8 |
| | | sodium hydr | oxide solution [inh] 1 mg/m ³ ect Level (for workers) | CAS No.: 1310-73-2 |
| | | exposure factor | | |
| | SUVA(CH) NIOSH: | MAK value: | piratory sensitizable (Sa), skin sensitizable (Sh), teratogenic 2 e mg/m ³ 2 mg/m ³ | |
| | (TWA OSHA: |] Time-weighted av | rerage to a reference period of 8 hours, [STEL] Short-term ex [TWA] 2 mg/m ³ | posure limit related to a 15-minute period |
| Go | | and extraction | system in the room, floor resistant to chemicals intained at the workplace. | with floor drainage and washing facilities. The highest |
| .2.1 | | y protection al recommenda | tions. | |
| 8.2.2 | | according EN | 374 (permeation time >30 min - level 2), consist s chemical resistant latex gloves with code EN 3 | of PVC, natural latex, Neopren, or Nitril (f.ex. from Ansell i74-3 level 1. |
| .2.3 | Eye protec Yes, safety | | ing EN 166 with integrated side shields or wrap- | around protection or face protection. |
| .2.4 | Skin protect Recomment | | othing damage, and to avoid contamination with t | these hazards. |
| .2.5 | with the skir | king, smoking, t n, eyes and clot | | nd at outdoor workplaces is prohibited. Avoid contact has been spilled, and soak it in water. Wash hands I then apply protective skin cream. |
| ECTION | l 9: Phys | ical and c | hemical properties | |
| .1 Int | formation | on basic ph | ysical and chemical properties | |
| | 11 CAL 00 | lution | | |

| 1 L CAL solution Appearance: liquid pH: Solubility in water: | Colour: colourless 2-3 0-100 % | Odor: acetic |
|--|--------------------------------------|--------------|
| • | | |



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|--|---|-------------------------------|------------|
| | | | |
| 100 mL CAL stock solution | | O demonstration | |
| Appearance: liquid | Colour: colourless | Odor: acetic | |
| pH: | 2-3 | | |
| Specific gravity: | 1,02 g/cm ³ | | |
| Solubility in water: | 0-100 % | | |
| 500 mL dist. water | | | |
| Appearance: liquid | Colour: colourless | Odor: odorless | |
| pH: | 6-8 | | |
| Specific gravity: | 1,00 g/cm³ | | |
| 25 mL K-1 | | | |
| Appearance: liquid | Colour: colourless | Odor: odorless | |
| pH: | 12-13 | | |
| Specific gravity: | 1,04 g/cm ³ | | |
| Solubility in water: | 0-100 % | | |
| 12 g K-2 | | | |
| Appearance: powder (solid) | Colour: colourless | Odor: odorless | |
| pH: | 6-8 (10%) | | |
| Solubility in water: | 0-30 % | | |
| 30 mL P-1 | | | |
| | Colour: colourless | Odor: odorless | |
| Appearance: liquid pH: | 0-1 | Oddi. Oddiless | |
| Specific gravity: | 1,21 g/cm ³ | | |
| Solubility in water: | 0-100 % | | |
| | | | |
| 30 mL P-2 | | | |
| Appearance: liquid | Colour: colourless | Odor: penetrative | |
| pH: Solubility in water: | 5-7 0-100 % | | |
| Solubility in water. | 0-100 // | | |
| 100 p. folded filter papers | | | |
| Appearance: solid | Colour: colourless | Odor: odorless | |
| Solubility in water: | 0 % | | |
| 25 mL pH 4-10 | | | |
| Appearance: liquid | Colour: red | Odor: alcoholic | |
| pH: | 6-8 | | |
| Flash point: | 18 °C | | |
| Specific gravity: | 0,79 g/cm³ | | |
| Solubility in water: | 0-100 % | | |
| 30 mL P-K | | | |
| Appearance: liquid | Colour: colourless | Odor: odorless | |
| pH: | 0-1 | | |
| Specific gravity: | 1,22 g/cm ³ | | |
| Solubility in water: | 0-100 % | | |
| 30 mL Pyrophosphate solution | ı | | |
| Appearance: liquid | Colour: colourless | Odor: odorless | |
| pH: | 9-10 | | |
| Solubility in water: | 0-100 % | | |
| 100 Test sticks Ammonium | | | |
| Appearance: solid | Colour: yellow | Odor: odorless | |
| | | | |
| 100 Indicator sticks Appearance: solid | Colour: colored | Odor: odorless | |
| Appearance. solid | | | |
| | | | |



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|----------|---|--|---|--------------------------|--|--|--|
| Printing | g date: 24.10.2017 | Date of issue: 14.0 | 9.2017 | | | | |
| | 100 test strips | | | | | | |
| | Appearance: solid | Colour: colored | Odor: odorless | | | | |
| | 1 L CaCl ₂ solution | | | | | | |
| | Appearance: liquid pH: | Colour: colourless 6-8 | Odor: odorless | | | | |
| | Specific gravity: | 0-8 1,0 g/cm³ | | | | | |
| | Solubility in water: | 0-100 % | | | | | |
| | 100 mL CaCl ₂ stock soluti | on | | | | | |
| | Appearance: liquid | Colour: colourless | Odor: odorless | | | | |
| | pH: Solubility in water: | 6-8 0-100 % | | | | | |
| | 20 ml NUL + 4 | | | | | | |
| | 30 mL NH 4 ⁺ -1 Appearance: liquid | Colour: colourless | Odor: odorless | | | | |
| | pH: | 14 | | | | | |
| | Specific gravity: Solubility in water: | 1,35 g/mL 0-100 % | | | | | |
| 9.2 | Other information Data for the other parameters of the mixtures are not available, because no registration and no chemical safety report is required. Relevant Properties of Substance Group Substances are very volantile and form flammable vapour-air mixtures | | | | | | |
| SECT | FION 10: Stability and r | eactivity | | | | | |
| 10.1 | Reactivity | | | | | | |
| | no further data available. | | | | | | |
| 0.2 | Chemical stability No known instability. | | | | | | |
| 10.3 | Possibility of hazardous Can react violently with organic r | reactions naterial. No further data available. | | | | | |
| 10.4 | Conditions to avoid Not necessary | | | | | | |
| 10.5 | Incompatible materials | | | | | | |
| 5.5 | - | acids and oxidizing agents. Avoid co | ntact with strong acids or alkalines | | | | |
| 10.6 | Hazardous decomposition | on products | | | | | |
| | • | all reagents are safety and separate | stored. Decompositions are not observe | ed during the expiration | | | |
| SECT | ION 11: Toxicological | information | | | | | |
| 11.1 | Information on toxicolog | | data on the toxicity of this product are no | t available. | | | |
| | 1 L CAL solution | | | | | | |
| | | <i>m acetate</i> listed 4280 mg/kg | CAS No.: 62-54 | 1-4 | | | |
| | Chemical: acetic | acid | CAS No.: 64-19 |)-7 | | | |
| | TSCA Inventory: | listed California P | roposition 65 List: not listed | | | | |
| | Exposure Routes: Target Organs: | inhalation, skin and/or eye contact Eyes, skin, respiratory system, tee | | | | | |
| | Symptoms: | irritation eyes, skin, nose, throat; e | ye, skin burns; skin sensitization; dental | erosion; black skin, | | | |
| | hyperkeratosis; conjunctiviti Australia NICNAS: | | ada CEPA 1999: DSL Yes | | | | |

| Cymptoms. | initiation cycs, skin, i | 1030, unoal, cyc, skin burns, si | an sensuzation, dem |
|--------------------------------|--------------------------|----------------------------------|---------------------|
| hyperkeratosis; conjunctivitis | , lacrimation (di | - | |
| Australia NICNAS: | not listed | Canada CEPA 1999: | DSL Yes |
| Japan CSCL/PRTR: | not listed | Japan PDSCL: | not listed |
| Japan ISHL: | listed ≥1,0%/≥1,0%, | Article 57-2 (SDS required) | |
| | | | |

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|------------------------------|--|-----------|---|---|-------------------------|
| Thing date. 2 | 4.10.2017 | | | 3546. 14.00.2017 | |
| | | | 4 B - 4 - J | | |
| | South Korea TCCA: Korea Exist.Chem.Inv | | not listed | | |
| | LD50 _{orl rat} : | , | KE-00013 3310 mg/kg | | |
| | LC_LOW _{orl rat} : | | 16000 _{4h} mg/m ³ | | |
| | LC_LOWorl rat : | | 1200 mg/kg | | |
| | LC50 _{ihl mus} : | | 5620 ppm/1h | | |
| | LD50drm rbt : | | 1060 mg/kg | | |
| | LD50oral mouse : | | 4960 mg/kg | | |
| - 00 | | | | | |
| |) mL CAL stock s | | | | |
| | Chemical: | | acetate | CAS No.: 62-5 | 4-4ز |
| | TSCA Inventory: | | listed 4280 mg/kg | | |
| | LD50 _{orl rat} : | | 4280 mg/kg | | |
| | Chemical: | acetic a | | CAS No.: 64-1 | 19-7 |
| | TSCA Inventory: | | | California Proposition 65 List: not listed | |
| I | Exposure Routes: | | inhalation, skin and/or e | | |
| | Target Organs: | | Eyes, skin, respiratory s | | · · · · · · |
| | Symptoms: | | | se, throat; eye, skin burns; skin sensitization; denta | al erosion; black skin, |
| | hyperkeratosis; conju | | | C | |
| | Australia NICNAS: | | not listed | Canada CEPA 1999: DSL Yes | |
| | Japan CSCL/PRTR: | | not listed listed ≥1,0%/≥1,0%, Arti | Japan PDSCL: not listed | |
| | Japan ISHL: South Korea TCCA | | listed ≥1,0%/≥1,0%, Arti not listed | icle 57-2 (SDS requirea) | |
| | South Korea TCCA: Korea Exist.Chem.Inv | | | | |
| | LD50 _{orl rat} : | | KE-00013 3310 mg/kg | | |
| | LD50 _{orl rat} : LC_Low _{orl rat} : | | 3310 mg/kg 16000 _{4h} mg/m ³ | | |
| | LC_LOW _{orl rat} : LC_LOW _{orl rbt} : | | 16000 _{4h} mg/m ³ 1200 mg/kg | | |
| | LC_LOWorl rbt : LC50ihl mus : | | 5620 ppm/1h | | |
| | LD50drm rbt : | | 1060 mg/kg | | |
| | LD50 _{oral mouse} : | | 4960 mg/kg | | |
| | | | 4500 mg/ng | | |
| 500 |) mL dist. water | | | | |
| | Chemical: | water | | CAS No.: 7732 | 2-18-5 |
| | TSCA Inventory: | | listed | | |
| | Korea Exist.Chem.Inv | ventory: | KE-35400 | | |
| 25 | mL K-1 | | | | |
| | | sodium | hydroxide solution | CAS No.: 1310 | 0_72_9 |
| | TSCA Inventory: | | | CAS No.: 1310 California Proposition 65 List: not listed | J-1 3-2 |
| | Exposure Routes: | | inhalation, ingestion, ski | | |
| | Target Organs: | | Eyes, skin, respiratory s | | |
| : | Symptoms: | | | cous membrane; pneumonitis; eye, skin burns; tem | nporary 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%, Arti | ticle 57-2 (SDS required) | |
| | South Korea TCCA: | | not listed | • • | |
| | Korea Exist.Chem.Inv | | | | |
| | LD50 _{orl rat} : | | [40%] 1250 / [<25%] >20 | .000 mg/kg | |
| I | LD50 _{orl mus} : | | 40 mg/kg | | |
| 12 (| - 12 0 | | | | |
| - | g K-2 | dium | the second | CAS No - 143 | |
| | Chemical: | | tetraphenylborate | CAS No.: 143- | -66-8 |
| | TSCA Inventory: Japan CSCL/PRTR: | | listed PRTR: >1,0% B class I | | |
| | Japan CSCL/PRTR: Korea Exist.Chem.Inv | | | | |
| | LD50 _{orl rat} : | | KE-31629 288 mg/kg | | |
| | | | | f health when ingested in small quantities. | |
| | Acule Eneolo. Judou | ditor ore | il Intake, impairmente e. | field when ingested in sman quantities. | |
| | | | | | |
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|---|--|---|-----------------------------|
| Printing date: 24.10.2017 | Date of | issue: 14.09.2017 | |
| 30 mL P-1 Chemical: TSCA Inventory: Japan ISHL: Korea Exist.Chem.In | ammonium heptamolybdate listed (CAS 11098-84-3 listed ≥1,0%/≥0,1%, iventory: not listed |) CAS No.: 12054-8 | 5-2 |
| Chemical: TSCA Inventory: | <i>sulfuric acid</i> listed C | CAS No.: 7664-93 California Proposition 65 List: not listed | -9 |
| ACGIH: Exposure Routes: | 1 ppm inhalation, ingestion, sk | in and/or eye contact | |
| Target Organs: Symptoms: | Eyes, skin, respiratory s | | coniunctivitis: stomatis: |
| Australia NICNAŚ: Japan CSCL/PRTR: Japan ISHL: | listed ≥1,0%/≥1,0%, Art | Canada CEPA 1999: DSL Yes Japan PDSCL: Deleterious Substance icle 57-2 (SDS required) | |
| South Korea TCCA: Korea Exist.Chem.In LD50 _{orl rat} : LC50 _{ihl mouse} : LC50 _{ihl rat} : | Accident Precaution Ch ventory: KE-32570, >10% Toxic 2140 mg/kg 320 _{4h} mg/L 510 mg/m ³ | emical Yes 97-1-405, Acc. Precaution Chem. | |
| TRGS 905 (DE): | Kat 4 | | |
| 30 mL P-2 | | | |
| Chemical: TSCA Inventory: Exposure Routes: Target Organs: Symptoms: Australia NICNAS: Japan CSCL/PRTR: Japan ISHL: South Korea TCCA: Korea Exist.Chem.In LD50 _{orl rat} : LD50drm rat : | inhalation, ingestion, sk Eyes, skin, respiratory s irritation eyes, skin, mu not listed not listed listed ≥1,0%/≥1,0%, Art not listed | system | -4 |
| 100 p. folded filter | papers | | |
| Chemical: TSCA Inventory: Australia NICNAS: Japan CSCL/PRTR: Japan ISHL: South Korea TCCA: Korea Exist.Chem.In LD50orl rat : LC50ihl rat : LD50drm rbt : | filter paper (cellulose CAS 9004 listed C not listed not listed not listed not listed not listed not listed | I-34-6) CAS No.: - california Proposition 65 List: not listed Canada CEPA 1999: DSL yes Japan PDSCL: not listed | |
| 25 mL pH 4-10 | | | |
| Chemical: TSCA Inventory: Korea Exist.Chem.In | methyl red (pH indicator) listed iventory: KE-06693 | CAS No.: 493-52-7 | 7 |
| Chemical: TSCA Inventory: ACGIH: | ethanol listed C 1000 ppm | CAS No.: 64-17-5 California Proposition 65 List: not listed | |
| Exposure Routes: Target Organs: Symptoms: liver damage: anemi | | in and/or eye contact system, central nervous system, liver, blood, reproduct e; headache, drowsiness, lassitude (weakness, exhau | |
| Australia NICNAS: | not listed | Canada CEPA 1999: DSL yes | www.mn-nei |
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|--------------------------------|---|---|--|---------------------------|
| Finang da | te: 24.10.2017 | Date of ISSu | G. 17.UJ.ZUII | |
| | | | | |
| | Japan CSCL/PRTR: | not listed | Japan PDSCL: not listed | |
| | Japan ISHL: | listed ≥0,1%/≥0,1%, Article | | |
| | South Korea TCCA: | not listed | | |
| | Korea Exist.Chem.Inven | | | |
| | | C200 m m/km | | |
| | LD50 _{orl rat} : | 6200 mg/kg | | |
| | LC_Low _{ihl gpg} : | 21.9 g/m ³ | | |
| | LC_Loworl hmn : | 1400 mg/kg | | |
| | LC50ihl mouse : | 39 _{4h} g/m³ | | |
| | LC50 _{ihl rat} : | 20 _{10h} g/m³ | | |
| | LD50 _{drm rbt} : | 20 000 mg/kg | | |
| | LD50 _{oral mouse} : | 3450 mg/kg | | |
| | TRGS 905 (DE): | K5, M5, R _F C | | |
| | | | CAC No. 77.00 0 | |
| | Chemical: ph TSCA Inventory: | enolphthaleine (pH indicator) listed Calife | CAS No.: 77-09-8 prnia Proposition 65 List: listed, cancer | |
| | Australia NICNAS: | not listed | Canada CEPA 1999: DSL yes | |
| | Japan CSCL/PRTR: | | Chappaic an ISSO Stance not listed | |
| | • | | | |
| | Japan ISHL: | not listed | | |
| | South Korea TCCA: | not listed | | |
| | Korea Exist.Chem.Inven | | | |
| | LD50 _{orl rat} : | >1000 mg/kg | | |
| | EU carcinogen: TRGS 905 (DE): | Carcinogenicity cat. 2, Gerr Karzinogenität Kat. 2 | n Cell Mutagenicity cat. 3, >5% Reproductive Toxi | city cat. 3 |
| | Chemical: inc | dicator dye(s) | CAS No.: - | |
| | TSCA Inventory: | all listed, <1% | 0.010. | |
| | | | | |
| ÷ | 30 mL P-K | | | |
| | | lfuric acid | CAS No.: 7664-93 | -9 |
| | TSCA Inventory: | | ornia Proposition 65 List: not listed | |
| | ACGIH: | 1 ppm | | |
| | Exposure Routes: | inhalation, ingestion, skin a | | |
| | Target Organs: | Eyes, skin, respiratory system | em, teeth | |
| | Symptoms: | irritation eyes, skin, nose, th | nroat; pulmonary edema, bronchitis; emphysema; o | conjunctivitis; stomatis; |
| | dental erosion; eye, skin | burns: dermatitis | | |
| | Australia NICNAS: | not listed | Canada CEPA 1999: DSL Yes | |
| | Japan CSCL/PRTR: | not listed | Japan PDSCL: Deleterious Substance | |
| | Japan ISHL: | listed ≥1,0%/≥1,0%, Article | | |
| | South Korea TCCA: | Accident Precaution Chemi | | |
| | | | | |
| | | tory: KE-32570, >10% Toxic 97- | 1-405, Acc. Precaution Chem. | |
| | LD50 _{orl rat} : | 2140 mg/kg | | |
| | LC50 _{ihl mouse} : | 320 _{4h} mg/L | | |
| | LC50 _{ihl rat} : | 510 mg/m³ | | |
| | TRGS 905 (DE): | Kat 4 | | |
| ; | 30 mL Pyrophosphate | e solution | | |
| | Chemical: ph | osphate buffer solution | CAS No.: - | |
| | TSCA Inventory: | all listed | | |
| | Korea Exist.Chem.Inven | tory: listed | | |
| | | | | |
| | 100 Test sticks Ammo | | CAS No . 7700 00 | 7 |
| | Chomical | | CAS No.: 7783-33 | - 1 |
| | | tassium tetraiodomercurate(II) | | |
| | TSCA Inventory: | listed Califo | ornia Proposition 65 List: listed developmental | |
| | TSCA Inventory: Exposure Routes: | listed Čalifo inhalation, skin absorption, | ingestion, skin and/or eye contact | |
| | TSCA Inventory: Exposure Routes: Target Organs: | listed Čalifo inhalation, skin absorption, Eyes, skin, respiratory syste | ingestion, skin and/or eye contact em, central nervous system, kidneys | |
| | TSCA Inventory: Exposure Routes: Target Organs: Symptoms: | listed Calife inhalation, skin absorption, Eyes, skin, respiratory syste irritation eyes, skin; cough, | ingestion, skin and/or eye contact | s, pneumonitis; tremor |
| | TSCA Inventory: Exposure Routes: Target Organs: Symptoms: insomnia, irritability, inde | listed Calife inhalation, skin absorption, Eyes, skin, respiratory syste irritation eyes, skin; cough, ecision, headac | ingestion, skin and/or eye contact em, central nervous system, kidneys chest pain, dyspnea (breathing difficulty), bronchiti | is, pneumonitis; tremor |
| | TSCA Inventory: Exposure Routes: Target Organs: Symptoms: insomnia, irritability, inde Japan CSCL/PRTR: | listed Calife inhalation, skin absorption, Eyes, skin, respiratory syste irritation eyes, skin; cough, ecision, headac PRTR: ≥1,0%Hg class I | ingestion, skin and/or eye contact em, central nervous system, kidneys | is, pneumonitis; tremor |
| | TSCA Inventory: Exposure Routes: Target Organs: Symptoms: insomnia, irritability, inde Japan CSCL/PRTR: Japan ISHL: | listed Calife inhalation, skin absorption, Eyes, skin, respiratory syste irritation eyes, skin; cough, ecision, headac PRTR: ≥1,0%Hg class I listed ≥0,3%/≥0,1% | ingestion, skin and/or eye contact em, central nervous system, kidneys chest pain, dyspnea (breathing difficulty), bronchiti | is, pneumonitis; tremor |
| | TSCA Inventory: Exposure Routes: Target Organs: Symptoms: insomnia, irritability, inde Japan CSCL/PRTR: Japan ISHL: | listed Califo inhalation, skin absorption, Eyes, skin, respiratory syste irritation eyes, skin; cough, ecision, headac PRTR: ≥1,0%Hg class I listed ≥0,3%/≥0,1% tory: KE-12197, Toxic 97-1-140 | ingestion, skin and/or eye contact em, central nervous system, kidneys chest pain, dyspnea (breathing difficulty), bronchiti | is, pneumonitis; tremor |
| | TSCA Inventory: Exposure Routes: Target Organs: Symptoms: insomnia, irritability, inde Japan CSCL/PRTR: Japan ISHL: | listed Calife inhalation, skin absorption, Eyes, skin, respiratory syste irritation eyes, skin; cough, ecision, headac PRTR: ≥1,0%Hg class I listed ≥0,3%/≥0,1% | ingestion, skin and/or eye contact em, central nervous system, kidneys chest pain, dyspnea (breathing difficulty), bronchiti | |
| | TSCA Inventory: Exposure Routes: Target Organs: Symptoms: insomnia, irritability, inde Japan CSCL/PRTR: Japan ISHL: Korea Exist.Chem.Inven LD50 _{orl rat} : | listed Califo inhalation, skin absorption, Eyes, skin, respiratory syste irritation eyes, skin; cough, ecision, headac PRTR: ≥1,0%Hg class I listed ≥0,3%/≥0,1% tory: KE-12197, Toxic 97-1-140 HgI ₂ 18 mg/kg | ingestion, skin and/or eye contact em, central nervous system, kidneys chest pain, dyspnea (breathing difficulty), bronchiti Japan PDSCL: Poisonous substance | |
| MACHEF | TSCA Inventory: Exposure Routes: Target Organs: Symptoms: insomnia, irritability, inde Japan CSCL/PRTR: Japan ISHL: Korea Exist.Chem.Inven LD50 _{orl rat} : | listed Calife inhalation, skin absorption, Eyes, skin, respiratory syste irritation eyes, skin; cough, ecision, headac PRTR: ≥1,0%Hg class I listed ≥0,3%/≥0,1% tory: KE-12197, Toxic 97-1-140 HgI ₂ 18 mg/kg G · Neumann-Neander-Str. 6–8 | ingestion, skin and/or eye contact em, central nervous system, kidneys chest pain, dyspnea (breathing difficulty), bronchiti Japan PDSCL: Poisonous substance • 52355 Düren · Germany | |
| MACHEF DE/interi | TSCA Inventory: Exposure Routes: Target Organs: Symptoms: insomnia, irritability, inde Japan CSCL/PRTR: Japan ISHL: Korea Exist.Chem.Inven LD50 _{orl rat} : REY-NAGEL GmbH & Co. Kontional: | listed Calife inhalation, skin absorption, Eyes, skin, respiratory syste irritation eyes, skin; cough, ecision, headac PRTR: ≥1,0%Hg class I listed ≥0,3%/≥0,1% tory: KE-12197, Toxic 97-1-140 HgI ₂ 18 mg/kg G · Neumann-Neander-Str. 6–8 ⊣: | ingestion, skin and/or eye contact em, central nervous system, kidneys chest pain, dyspnea (breathing difficulty), bronchiti Japan PDSCL: Poisonous substance • 52355 Düren • Germany FR: US: | www.mn-ne |
| MACHEF DE/interr Tel.: + | TSCA Inventory: Exposure Routes: Target Organs: Symptoms: insomnia, irritability, inde Japan CSCL/PRTR: Japan ISHL: Korea Exist.Chem.Inven LD50 _{orl rat} : REY-NAGEL GmbH & Co. Kon hational: CH | listed Calife inhalation, skin absorption, Eyes, skin, respiratory syste irritation eyes, skin; cough, ecision, headac PRTR: ≥1,0%Hg class I listed ≥0,3%/≥0,1% tory: KE-12197, Toxic 97-1-140 HgI ₂ 18 mg/kg G · Neumann-Neander-Str. 6–8 H: #.: +41 62 388 55 00 | ingestion, skin and/or eye contact em, central nervous system, kidneys chest pain, dyspnea (breathing difficulty), bronchiti Japan PDSCL: Poisonous substance • 52355 Düren • Germany FR: US: Tel.: +33 388 68 22 68 Tel.: +1 48 | www.mn-ne 4 821 0984 |
| MACHEF DE/interr Tel.: + | TSCA Inventory: Exposure Routes: Target Organs: Symptoms: insomnia, irritability, inde Japan CSCL/PRTR: Japan ISHL: Korea Exist.Chem.Inven LD50 _{orl rat} : REY-NAGEL GmbH & Co. Kontional: | listed Calife inhalation, skin absorption, Eyes, skin, respiratory syste irritation eyes, skin; cough, ecision, headac PRTR: ≥1,0%Hg class I listed ≥0,3%/≥0,1% tory: KE-12197, Toxic 97-1-140 HgI ₂ 18 mg/kg G · Neumann-Neander-Str. 6–8 H: el.: +41 62 388 55 00 | ingestion, skin and/or eye contact em, central nervous system, kidneys chest pain, dyspnea (breathing difficulty), bronchiti Japan PDSCL: Poisonous substance • 52355 Düren • Germany FR: US: Tel.: +33 388 68 22 68 Tel.: +1 48 | www.mn-ne |



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| Printing date: 24.10.2017 | | Date of issue: 14.09.2017 | | |
| | | | | |
| LC Loworl hmn : | 357 mg/kg | | | |
| LD50 _{drm rat} : | 75 mg/kg | | | |
| | 01 | | | |
| TRGS 907 (DE): | Sh | | | |
| Chemical: | filter paper (cellulose C | CAS 9004-34-6) | CAS No.: - | |
| TSCA Inventory: | listed | California Proposition 65 | | |
| Australia NICNAS: | not listed | Canada CEPA 1 | , | |
| Japan CSCL/PRTR: Japan ISHL: | not listed not listed | Japan PDSCL: | not listed | |
| South Korea TCCA: | not listed | | | |
| Korea Exist.Chem.Inv | | | | |
| LD50 _{orl rat} : | >5000 mg/kg | _ | | |
| LC50 _{ihl rat} : | >5800 _{4h} mg/m | 3 | | |
| LD50 _{drm rbt} : | >2000 mg/kg | | | |
| Chemical: | PVC foil (CAS 9002-80 | 5-2) | CAS No.: - | |
| TSCA Inventory: | listed | () 2) | 040 110 | |
| | | | | |
| 100 Indicator sticks | 5 | | | |
| Chemical: | cellulose | | CAS No.: 9004-34-6 | |
| TSCA Inventory: | listed | California Proposition 65 | 5 List: not listed | |
| Exposure Routes: | | and/or eye contact | | |
| Target Organs: Symptoms: | Eyes, skin, res | piratory system skin, mucous membrane | | |
| Australia NICNAS: | not listed | Canada CEPA 1 | 999 [.] DSL ves | |
| Japan CSCL/PRTR: | not listed | Japan PDSCL: | not listed | |
| Japan ISHL: | not listed | | | |
| South Korea TCCA: | not listed | | | |
| Korea Exist.Chem.Inv LD50 _{orl rat} : | >5000 mg/kg | | | |
| LC50 _{ihl rat} : | >5800 _{4h} mg/m | 3 | | |
| LD50 _{drm rbt} : | >2000 mg/kg | | | |
| | | | | |
| Chemical: TSCA Inventory: | indicator dye(s) all listed, <1% | | CAS No.: - | |
| roor inventory. | | | | |
| Chemical: | PVC foil (CAS 9002-80 | 5-2) | CAS No.: - | |
| TSCA Inventory: | listed | | | |
| | | | | |
| 100 test strips Chemical: | cellulose | | CAS No.: 9004-34-6 | |
| TSCA Inventory: | listed | California Proposition 65 | | |
| Exposure Routes: | | and/or eye contact | | |
| Target Organs: | | piratory system | | |
| Symptoms: | | skin, mucous membrane | | |
| Australia NICNAS: Japan CSCL/PRTR: | not listed not listed | Canada CEPA 1 Japan PDSCL: | not listed | |
| Japan ISHL: | not listed | tapan Pooe. | Hot listed | |
| South Korea TCCA: | not listed | | | |
| Korea Exist.Chem.Inv | 5 | | | |
| LD50 _{orl rat} : LC50 _{ihl rat} : | >5000 mg/kg >5800 _{4h} mg/m | 3 | | |
| LD50 _{drm rbt} : | >2000 mg/kg | | | |
| - unit for | | | | |
| Chemical: | | %, no declaration necessary | CAS No.: - | |
| TSCA Inventory: | all listed, <1% | | | |
| Korea Exist.Chem.Inv | ventory: listed | | | |
| | | | | |
| | | | | www.mn-net |
| | KG . Neumann Neon | der-Str. 6-8 - 52355 Dürop | ermany | |
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| | 1601 date: 24.10.2017 | VISOCOLOR soil case,com Date of issue: 14.09.2017 | nplete -New - Page: 23/28 |
|-------|--|--|--|
| | | AS 9002-86-2) | CAS No.: - |
| | 1 - O-Ol- colution | | |
| | TSCA Inventory: liste Korea Exist.Chem.Inventory: KE- LD50 _{orl rat} : 100 | loride (dihydrate) ed (CAS 10043-52-4) -04496 00 mg/kg 30 mg/kg | CAS No.: 10035-04-8 |
| | 100 mL CaCl ₂ stock solution | 1 | |
| | Chemical: calcium chlu TSCA Inventory: liste Korea Exist.Chem.Inventory: KE- LD50 _{orl rat} : 100 | <i>loride (dihydrate)</i> ed (CAS 10043-52-4) | CAS No.: 10035-04-8 |
| | 30 mL NH ₄ + -1 | | |
| | Chemical: sodium hyd TSCA Inventory: liste Exposure Routes: inha Target Organs: Eye Symptoms: irrita Australia NICNAS: not Japan CSCL/PRTR: not Japan ISHL: liste South Korea TCCA: not Korea Exist.Chem.Inventory: KE- | alation, ingestion, skin and/or eye conta es, skin, respiratory system ation eyes, skin, mucous membrane; pn : listed Canada CEP : listed Japan PDSC ed ≥1,0%/≥1,0%, Article 57-2 (SDS requ : listed | nct neumonitis; eye, skin burns; temporary loss of hair 2A 1999: DSL Yes 2L: not listed |
| | | | |
| | ON 12: Ecological inform Toxicity | | |
| | Toxicity Following information is valid for p | | |
| | Toxicity Following information is valid for put 1 L CAL solution Chemical: calciun Water hazard class (DE): | nure substances. n acetate 1 | CAS No.: 62-54-4 |
| SECTI | Toxicity Following information is valid for per 1 L CAL solution Chemical: calciun | nure substances. n acetate 1 12-13 acid 75 mg/L >300,82 mg/L 2850 mg/L 1 WGK No.: 0093 | CAS No.: 62-54-4 CAS No.: 64-19-7 |
| | Toxicity Following information is valid for print 1 L CAL solution Chemical: calcium Water hazard class (DE): Storage class (VCI): Chemical: acetic a LC50fish/96h : EC50daphnia/48h : EC10pseudomonas putita/16h : Water hazard class (DE): Dispersion coefficient _{(octanol-} Storage class (VCI): | nure substances. n acetate 1 12-13 acid 75 mg/L >300,82 mg/L 2850 mg/L 1 WGK No.: 0093 -water): -0,17 | |
| | Toxicity Following information is valid for pr 1 L CAL solution Chemical: calcium Water hazard class (DE): Storage class (VCI): Chemical: acetic a LC50fish/96h : EC50daphnia/48h : EC10pseudomonas putita/16h : Water hazard class (DE): Dispersion coefficient(octanol- Storage class (VCI): 100 mL CAL stock solution Chemical: calcium Water hazard class (DE): | mure substances. m acetate 1 12-13 acid 75 mg/L >300,82 mg/L 2850 mg/L 1 WGK No.: 0093 -water) : -0,17 8 B m acetate 1 12-13 acid 75 mg/L >300,82 mg/L 2850 mg/L 1 WGK No.: 0093 | CAS No.: 64-19-7 |

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| rinting date: 24.10.2017 | Date of Issue: 14.09.2017 | |
| 500 mL dist. water | | |
| Chemical: water | | CAS No.: 7732-18-5 |
| 25 mL K-1 | | |
| Chemical: sodium h Avoid contact of substance/mix LC50 _{leuciscus idus/96h} : LC50 _{fish/96h} : EC50 _{daphnia/48h} : Water hazard class (DE): | nydroxide solution kture to environment. 35-189 mg/L 45.4 mg/L >100 mg/L 1 WGK No.: 142 | CAS No.: 1310-73-2 |
| Storage class (VCI): | 8 B | |
| 12 g K-2 | | |
| Chemical: sodium te Water hazard class (DE): Storage class (VCI): | etraphenylborate 3 12-13 | CAS No.: 143-66-8 |
| 30 mL P-1 | | |
| Chemical: ammoniu Water hazard class (DE): Storage class (VCI): | <i>um heptamolybdate</i> 1 WGK No.: 0637 12-13 | CAS No.: 12054-85-2 |
| Chemical: <i>sulfuric a</i> Avoid contact of substance/mix LC50 _{fish/96h} : EC50 _{daphnia/48h} : | | CAS No.: 7664-93-9 |
| Water hazard class (DE): Storage class (VCI): | 1 WGK No.: 0182 8 B | |
| 30 mL P-2 | | |
| Chemical: sodium d LC50 _{fish/96} h: EC50 _{daphnia/48} h: IC50 _{scenedesmus} quadricauda/72h: Water hazard class (DE): Storage class (VCI): | 150-220 mg/L 89 mg/L | CAS No.: 7681-57-4 |
| 100 p. folded filter papers | | |
| | er (cellulose CAS 9004-34-6) nwg 11 | CAS No.: - |
| 25 mL pH 4-10 Chemical: <i>methyl re</i> Water hazard class (DE): | ed (pH indicator) 2 | CAS No.: 493-52-7 |
| Storage class (VCI): | 12-13 | |
| Chemical: ethanol PNEC _{(fresh water}): PNEC = Predicted No Effected Concer | 0.96 mg/L | CAS No.: 64-17-5 |
| LC50daphnia magna/48h: LC50pimephales promelas/96h: LC50leuciscus idus/96h: LC50fish/96h: | >100 mg/L 13400 - 15100 mg/L 8140 _{48h} mg/L 13 g/L | |
| EC50 _{daphnia} /48h: IC50 _{scenedesmus quadricauda/72h: EC10_{pseudomonas putita/16h}:} | 9.3-14.2 g/L : 5000 _{7d} mg/L EC5: 6500 mg/L | |
| Water hazard class (DE): Dispersion coefficient _{(octanol-wa} Storage class (VCI): | 1 WGK No.: 0096 ater): -0.31 3 | |



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| Printing date: 24.10.2017 | | Date of issue: 14.09.2017 | | |
| Chemical: Water hazard class (I Dispersion coefficient Storage class (VCI): | DE): t _(octanol-water) : | ine (pH indicator) 1 0.9 12-13 | CAS No.: 77-09-8 | |
| Chemical: Storage class (VCI): | indicator dye(s | s) 12-13 | CAS No.: - | |
| 30 mL P-K Chemical: Avoid contact of subs LC50 _{fish/96h} : EC50 _{daphnia/48h} : Water hazard class (I Storage class (VCI): | DE): | to environment. 16-29 mg/L 29 _{24h} mg/L 1 WGK No.: 0182 8 B | CAS No.: 7664-93-9 | |
| 30 mL Pyrophosphate s Chemical: Water hazard class (I Storage class (VCI): | phosphate buf | fer solution 1 12 | CAS No.: - | |
| 100 Test sticks Ammoni Chemical: Bio Toxicity: Water hazard class (I Storage class (VCI): | potassium tetra | aiodomercurate(II) LC ₅₀ : 0.5 _{HgCl2/48h} mg/L 3 WGK No.: n.n. 6.1 B | CAS No.: 7783-33-7 | |
| Chemical: Water hazard class (I Storage class (VCI): | | <i>llulose CAS 9004-34-6)</i> nwg 11 | CAS No.: - | |
| Chemical: | PVC foil (CAS | 9002-86-2) | CAS No.: - | |
| 100 Indicator sticks Chemical: Water hazard class (I Storage class (VCI): | <i>cellulose</i> DE): | nwg 11 | CAS No.: 9004-34-6 | |
| Chemical: Storage class (VCI): | indicator dye(s | s) 12-13 | CAS No.: - | |
| Chemical: | PVC foil (CAS | 9002-86-2) | CAS No.: - | |
| 100 test strips Chemical: Water hazard class (I Storage class (VCI): | <i>cellulose</i> DE): | nwg 11 | CAS No.: 9004-34-6 | |
| Chemical: Water hazard class (I Storage class (VCI): | | ture < 1%, no declaration necessary 1 12-13 | CAS No.: - | |
| Chemical: | PVC foil (CAS | 9002-86-2) | CAS No.: - | |
| 1 L CaCl ₂ solution Chemical: LC50 _{daphnia} magna/48h LC50 _{fish/96} h : IC50 _{scene} desmus quadr Water hazard class (I Storage class (VCI): | ricauda/72h : | de (dihydrate) 3005 mg/L 10.65 g/L 3130 mg/L 1 WGK No.: 0220 12-13 | CAS No.: 10035-04-8 | |

100 mL CaCl₂ stock solution



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 FR: US: Tel.: +41 62 388 55 00 Fax: +41 62 388 55 05 +33 388 68 22 68 Tel.: Tel.: +1 484 821 0984 Fax: +33 388 51 76 88 Fax: +1 484 821 1272 Version: M V 4.3.0 E-mail: info@mn-net.com E-mail: sales-ch@mn-net.com E-mail: sales-fr@mn-net.com E-mail: sales-us@mn-net.com



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| Printing | g date: 24.10.2017 | Date of issue: 14.09.2017 | | |
| | Chemical: calcium chlo LC50 _{daphnia} magna/48h : LC50 _{fish/96h} : IC50 _{scenedesmus} quadricauda/72h : Water hazard class (DE): Storage class (VCI): | bride (dihydrate) 3005 mg/L 10.65 g/L 3130 mg/L 1 WGK No.: 0220 12-13 | CAS No.: 10035-04-8 | |
| | 30 mL NH ₄ + -1 | | | |
| | Chemical: sodium hydr Avoid contact of substance/mixtur LC50 _{leuciscus} idus/96h : LC50 _{fish/96h} : EC50 _{daphnia/48h} : Water hazard class (DE): Storage class (VCI): | roxide solution re to environment. 35-189 mg/L 45.4 mg/L >100 mg/L 1 WGK No.: 142 8 B | CAS No.: 1310-73-2 | |
| 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 assess no data available | sment | | |
| 12.6 | 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

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Normally it is possible to empty small amounts (diluted!) into drains. Not for mercury containing test solutions, please collect for disposal of hazardous waste. Empty containers of corrosive reagents prior to disposal, rinse with water.

SECTION 14: Transport information

| 14.1. UN number: | 3316 14.2. | UN proper shipping name: Chemical Kit |
|----------------------|--------------|---|
| 14.3. Class: | 9 14.4. | Packing group: II |
| Road transport | | |
| Classification code: | M11 | Tunnel restriction code: E |
| Limited Quantity: | acc. ADR 3.3 | 3.1/251: see LQ in Alternative declaration for transportation |
| Air transport | | |
| PAX: | 960 | max. weight PAX: 10 KG |
| CAO: | 960 | max. weight CAO: 10 KG |
| Maritime transport | | - |
| EmS: | F-A, S-P | Storage category: A |

Or use Alternative declaration for transportation:

UN No.: (see below) UN 1993 class 3 II, class 8 II, Excepted Quantities (≤30 mL/∑≤500 mL) = ADR/ IATA E2 or

| 14.1 UN number: 14.3 Class: Road transport | | UN proper shipping name: Flammable liquid, n.o.s. (ethanol mixture) Packing group: II |
|--|----------|--|
| Classification code: | F1 | |
| Limited Quantity: | 1 L | Tunnel restriction code: E |
| Excepted Quantity: Air transport | E 2 | Special instructions: 640C |
| PAX: | 353 | max. weight PAX: 5 L |
| CAO: Maritime transport | 364 | max. weight CAO: 60 L |
| EmS: | F-E, S-E | Storage category: B |

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|------------------------|------------|-------|--|-----------------------|
| nting date: 24.10.2017 | | | Date of issue: 14.09.2017 | |
| 14.1 UN number: | 3264 | | | |
| | | name. | Corrosive liquid, acidic, inorganic, n.o.s. (sulfuric acid, sodium disulfite sol | ution) |
| 14.3 Class: | 8 | | Packing group: II | |
| Road transport | • | | | |
| Classification code: | C1 | | | |
| Limited Quantity: | 1 L | | Tunnel restriction code: E | |
| Excepted Quantity: | E 2 | | | |
| Air transport | | | | |
| PAX: | 851 | | max. weight PAX: 1 L | |
| CAO: | 855 | | max. weight CAO: 30 L | |
| Maritime transport | | | | |
| EmS: | F-A, S | S-B | Storage category: B | |
| 14.1 UN number: | 3266 | 14.2 | UN proper shipping name: Corrosive liquid, basic, inorganic, n.o.s. (sodiur | n hydroxide solution) |
| | 8 | 14.4 | Packing group: II | |
| Road transport | | | | |
| Classification code: | C5 | | | |
| Limited Quantity: | 1 L | | Tunnel restriction code: E | |
| Excepted Quantity: | E 2 | | | |
| Air transport | 054 | | may weight DAY. 11 | |
| PAX: CAO: | 851 855 | | max. weight PAX: 1 L max. weight CAO: 30 L | |
| Maritime transport | 000 | | max. weight CAO. 50 L | |
| EmS: | F-A, S | | Storage category: B | |

14.5 **Environmental hazards**

not necessary, contains only small quantities of hazardous substances

- 14.6 Special precautions for user not necessary
- Transport in bulk according to Annex II of MARPOL and the IBC Code 14.7 not applicable

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture German act governing protection from hazardous substances (Chemicals Act / Chemikaliengesetz- ChemG), revised on August 2013 German order governing protection from hazardous substances (Ordinance on Hazardous Substances / Gefahrstoffverordnung -GefStoffV), revised on November 2010, according to Directive 98/24/EC TRGS 200, German engineering rules governing the classification and labelling of hazardous substances, preparations and products, updated October 2011

15.2 Chemical safety assessment

not necessary for these small amounts ---

SECTION 16: Other information

16.1 List of H and P phrases

16.1.1 List of relevant H phrases

| | H225 | Highly flammable liquid and vapour. |
|--------|-----------------|---|
| | H290 | May be corrosive to metals. |
| | H302 | Harmful if swallowed. |
| | H314 | Causes severe skin burns and eye damage. |
| | H315 | Causes skin irritation. |
| | H318 | Causes serious eye damage. |
| | H319 | Causes serious eye irritation. |
| | EUH031 | Contact with acids liberates toxic gas. |
| 16.1.2 | List of relevan | t P phrases |
| | P210 | . Keep away from heat/sparks/open flames/hot surfaces. No smoking |
| | P233 | Keep container tightly closed. |
| | | |

- P260D Do not breathe vapours.
- P260sh Do not breathe dust/vapours.



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

| REF: 931601 | VISOCOLOR soil case, complete - New - | Page: 28/28 | | |
|---------------------------|--|---------------------------|--|--|
| Printing date: 24.10.2017 | Date of issue: 14.09.2017 | | | |
| P264W | Wash with water thoroughly after handling. | | | |
| P280sh | Wear protective gloves/eye protection. | | | |
| P301+312 | IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. | | | |
| P303+361+353 | IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower]. | | | |
| P305+351+338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lense do. Continue rinsing. | s, if present and easy to | | |
| P310 | Immediately call a POISON CENTER/doctor. | | | |
| P330 | Rinse mouth. | | | |
| P390 | Absorb spillage to prevent material damage. | | | |

16.2 Training advice

Multiple safety training of staffs about danger and protection by using hazards in working area. Additionally training and introduction of staffs for using these products

16.3 Recommended restriction on use

Only for professional user.

Look about employee restrictions for young people (f. ex. 94/33/EC or DE § 22 JArbSchG)! Look about employee restrictions for pregnant women and nursing women (f.ex. 92/85/EEC or for DE §§ 3, 4 und 6 MuSchG)! An individual package of this product or test kit has a moderate hazardous potential.

16.4 Further information

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16.5 Sources of key data

Regulation 453/2010/EU REACH - REQUIREMENTS FOR THE COMPILATION OF SAFETY DATA SHEETS Regulation 487/2013/EU, 4th adaptation of CLP regulation to technical and scientific progress TRGS 900, German engineering rules governing limits in air at work, updated September 2016 SUVA .CH, Limits in air at work 2009, revised on 01.2009 KÜHN, BIRETT Merkblätter Gefährliche Arbeitsstoffe (Data Sheets of Hazardous Substances)

Revisions/Updates

Reason for Revision: 2016-03 Adaptation of regulation 1221/2015/EU 2017-08 Adaption of new ethanol denaturation 2016/1867/EU

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