

Safety Data Sheet

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

REF: 920055	VISOCOLOR HE Manganese	Page: 1/15
Printing date: 22.11.2022	Date of issue: 16.03.2022	Version: 2.2.2.2

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

1.1 Product identifier

REF 920055
 no data available VISOCOLOR HE Manganese
 REACH Registration number(s): see SECTION 3.1/3.2 or
 A registration number for the substance(s) does not exist because the annual tonnage does not require registration or the substance or its use is excluded from registration.

1 x 30 mL Mn-1 UFI: 68KU-5395-G20J-GKFE
 1 x 28 mL Mn-2 UFI: HHRT-A372-M203-15N2
 1 x 22 mL Mn-3 UFI: XCKU-N3YJ-T201-4X1G

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
 Valencienner 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>>

Lieferant / Supplier
Carl Roth GmbH + Co KG
Schoemperlenstr. 3-5
76185 Karlsruhe, Germany
+49 721 5606 0
sicherheit@carlroth.de

SECTION 2: Hazard identification

2.0 Classification of the complete product according to Regulation (EC) 1272/2008



Signal word	DANGER
Hazard identification	Hazard classes/categories
H226	Flam. Liq. 3
H290	Met. Corr. 1
H302	Acute Tox. 4 oral
H314	Skin Corr. 1B
H315	Skin Irrit. 2
H317	Skin Sens. 1
H319	Eye Irrit. 2
H335	STOT SE 3
H351	Carc. 2
H371	STOT SE 2
H373	STOT RE 2
H400	Aquatic Acute 1



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

28 mL Mn-2



GHS05 GHS07 GHS09

Signal word DANGER

Hazard identification	Hazard classes/categories
H314	Skin Corr. 1B
H335	STOT SE 3
H400	Aquatic Acute 1

30 mL Mn-1



GHS05 GHS07 GHS08

Signal word DANGER

Hazard identification	Hazard classes/categories
H290	Met. Corr. 1
H317	Skin Sens. 1
H351	Carc. 2

22 mL Mn-3



GHS02 GHS05 GHS07 GHS08

Signal word DANGER

Hazard identification	Hazard classes/categories
H226	Flam. Liq. 3
H290	Met. Corr. 1
H302	Acute Tox. 4 oral
H315	Skin Irrit. 2
H317	Skin Sens. 1
H319	Eye Irrit. 2
H351	Carc. 2
H371	STOT SE 2
H373	STOT RE 2

List of H phrases: see section 16.2

2.2 Label elements according regulation (EC) 1272/2008

According **CLP directive** inner packages must be only labelled with GHS symbol(s) and product identifier(s) (EU 1272/2008 Annex I - 1.5.1.2). Harmful chemicals/mixtures with signal word: **WARNING** and highly flammable chemicals/mixtures must not be labelled with H and P phrases **until 125 mL** (EU 1272/2008 Annex I - 1.5.2). This labelling exemption is NOT valid for sensiblizing substances. 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).

28 mL Mn-2



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GHS05



GHS07



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.

30 mL Mn-1



GHS05



GHS08

Signal word: DANGER

H317, H351

May cause an allergic skin reaction. Suspected of causing cancer.

P201, P280sh

Obtain special instructions before use. Wear protective gloves/eye protection.

22 mL Mn-3



GHS02



GHS05



GHS08

Signal word: DANGER

H317, H351

May cause an allergic skin reaction. Suspected of causing cancer.

P201, P280sh

Obtain special instructions before use. Wear protective gloves/eye protection.

Label elements of the complete product



GHS02



GHS05



GHS08



GHS09

Signal word: DANGER

H314, H317, H351

Causes severe skin burns and eye damage. May cause an allergic skin reaction. Suspected of causing cancer.

P201, P260sh, P280sh, P303+361+353, P305+351+338, P310

Obtain special instructions before use. 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.

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, inhalation of vapours/dust, skin contact, impairments of health when ingested in small quantities. May



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cause sensitization by skin contact, also in repeated contact of small amounts. Suspected of causing cancer.

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

SECTION 3: Composition / information on ingredients**3.1 Substances or 3.2 Mixtures****28 mL Mn-2**Substance name: *ammonia solution*

CAS No.: 1336-21-6

Substance rating: H314, Skin Corr. 1B, H335, STOT SE 3, H400, Aquatic Acute 1

Formula: $\text{NH}_3 \cdot \text{H}_2\text{O}$

Pseudonym (de): Salmiakgeist

REACH Reg. No.: 01-2119488876-14-xxxx, 01-2119982985-14-XXXX

EC No.: 215-647-6

Indice No.: 007-001-01-2

Concentration: 16 - <25 %

acc. CLP (GHS): H314, Skin Corr. 1B, H335, STOT SE 3, H400, Aquatic Acute 1

30 mL Mn-1Substance name: *paraformaldehyde*

CAS No.: 30525-89-4

Substance rating: H228, Flam. Sol. 2, H302, Acute Tox. 4 oral, H315, Skin Irrit. 2, H317, Skin Sens. 1, H318, Eye Dam. 1, H332, Acute Tox. 4 inh., H335, STOT SE 3, H341, Muta. 2, H350, Carc. 1B

Formula: $(\text{CH}_2\text{O})_n$

Pseudonym (de): Polyoxymethylen

Concentration: 1 - <3 %

acc. CLP (GHS): H317, Skin Sens. 1, H351, Carc. 2

Substance name: *hydroxylammonium chloride*

CAS No.: 5470-11-1

Substance rating: H290, Met. Corr. 1, H302, Acute Tox. 4 oral, H312, Acute Tox. 4 derm., H315, Skin Irrit. 2, H317, Skin Sens. 1, H319, Eye Irrit. 2, H351, Carc. 2, H373, STOT RE 2, H400, Aquatic Acute 1

Formula: $\text{NH}_2\text{OH} \cdot \text{HCl} / \text{H}_4\text{CINO}$

Pseudonym (de): Hydroxylaminhydrochlorid

REACH Reg. No.: as intermediate

EC No.: 226-798-2

Indice No.: 612-123-00-2

Concentration: 5 - <10 %

acc. CLP (GHS): H290, Met. Corr. 1, H317, Skin Sens. 1, H351, Carc. 2

22 mL Mn-3Substance name: *hydroxylammonium chloride*

CAS No.: 5470-11-1

Substance rating: H290, Met. Corr. 1, H302, Acute Tox. 4 oral, H312, Acute Tox. 4 derm., H315, Skin Irrit. 2, H317, Skin Sens. 1, H319, Eye Irrit. 2, H351, Carc. 2, H373, STOT RE 2, H400, Aquatic Acute 1

Formula: $\text{NH}_2\text{OH} \cdot \text{HCl} / \text{H}_4\text{CINO}$

Pseudonym (de): Hydroxylaminhydrochlorid

REACH Reg. No.: as intermediate

EC No.: 226-798-2

Indice No.: 612-123-00-2

Concentration: 10 - <25 %

acc. CLP (GHS): H290, Met. Corr. 1, H302, Acute Tox. 4 oral, H315, Skin Irrit. 2, H317, Skin Sens. 1, H319, Eye Irrit. 2, H351, Carc. 2, H373, STOT RE 2

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Substance name:	<i>methanol</i>		
CAS No.:	67-56-1		
Substance rating:	H225, Flam. Liq. 2, H301, Acute Tox. 3 oral, H311, Acute Tox. 3 derm., H331, Acute Tox. 3 inh., H370, STOT SE 1		
Formula:	CH ₄ O, CH ₃ OH		
Pseudonym (de):	Methylalkohol		
REACH Reg. No.:	01-2119433307-44-xxxx		
EC No.:	200-659-6	Index No.:	603-001-00-X
Concentration:	2,5 - <10 %		
acc. CLP (GHS):	H226, Flam. Liq. 3, H302, Acute Tox. 4 oral, H371, STOT SE 2		

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

Chronic effects: Repeated contact, even in small amounts, can lead to sensitization. Rapid penetration and destruction of the skin. Especially in the heated form.

Causes severe skin burns and eye damage.

CMR Effekte: Suspected of causing cancer.

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 be carried out by an eye specialist. After INTAKE administer aluminium oxide drug suspensions. Administer a prophylaxis to counter pulmonary oedema following the INGESTION of corrosive aerosols. In the event of RESPIRATORY DISTRESS ensure that the patient inhales oxygen. Inform patient respectively further measures and the possibility of long-term damages. ---

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

WARNING: Flammable (GHS regulation). May form explosive vapour-air mixtures. Formation of hazardous and caustic vapour-air mixtures possible.



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5.3 Advice for firefighters

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

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

5.4 Additional information

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

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

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

6.2 Environmental precautions

Avoid contact of substance/mixture to environment.

PBT: not applicable

vPvB: not applicable

6.3 Methods and material for containment and cleaning up

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

Collect small amounts of leaked liquid and flush with water into drains.

6.4 Reference to other sections

see information in section 5.4,7,8 and 13

SECTION 7: Handling and storage

7.1 Precautions for safe handling

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

7.2 Conditions for safe storage, including any incompatibilities

Safe storage is guaranteed in the original packaging . Storage class (German chemical industry): see chapter 12.1

Storage class (VCI): 3

Water hazard class (DE): 3

7.2.1 Requirements for stock rooms and containers

Keep original product packages tightly closed during handling and storage. Use inbreakable container for transport of glass bottles.

7.3 Specific end use(s)

Product for analytical use.

SECTION 8: Exposure controls /personal protection

8.1 Control parameters

28 mL Mn-2

Chemical: *ammonia solution*

CAS No.: 1336-21-6

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/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: 20 ppm / 14 mg/m³

NIOSH: [TWA] 25 ppm / 18 mg/m³

NIOSH STEL: 35 ppm / 27 mg/m³

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

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



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30 mL Mn-1

Chemical: *paraformaldehyde* CAS No.: 30525-89-4
 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: *hydroxylammonium chloride* CAS No.: 5470-11-1
 TRGS 900 (DE): 1.5 mg/m³
 E/e respirable
 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

22 mL Mn-3

Chemical: *hydroxylammonium chloride* CAS No.: 5470-11-1
 TRGS 900 (DE): 1.5 mg/m³
 E/e respirable
 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: *methanol* CAS No.: 67-56-1
 DNEL: [derm] 40 mg/kg bw/day; [inh] 260 mg/m³
 DNEL = Derived No-Effect Level (for workers)
 PNEC (fresh water): 20.8 mg/L
 PNEC = Predicted No Effect Concentration
 EU value: [TWA] 200 ppm / 260 mg/m³
 TRGS 900 (DE): 200 ppm / 270 mg/m³
 E/e respirable
 Short-term exposure factor: 4 (II), H, Y
 skin resorptive (H), respiratory sensitizable (Sa), skin sensitizable (Sh), teratogenic (Z) not securely excluded / (Y) certainly excluded
 SUVA(CH) MAK value: 200 ppm/ 260 mg/m³
 SUVA(CH) BAT value: [U/c,b] 30 mg/L
 TRGS 903 (DE): U/c,b 30 mg/L
 B blood, U urine, a no limitation, b end of exposition or shift
 NIOSH: [TWA, skin] 200 ppm / 260 mg/m³
 NIOSH STEL: 250 ppm / 325 mg/m³
 [TWA] Time-weighted average to a reference period of 8 hours, [STEL] Short-term exposure limit related to a 15-minute period
 OSHA: [TWA] 200 ppm / 260 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.



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SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

28 mL Mn-2

- a) State of aggregation:
- b) Colour: colourless
- c) Odor: red
- 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: 10-11
- 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: 0,89 g/cm³
- q) Relative vapour density (air=1) : no data available
- r) Particle size: no data available

30 mL Mn-1

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

22 mL Mn-3

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



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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 corrosive.

SECTION 10: Stability and reactivity

10.1 Reactivity

no further data available.

10.2 Chemical stability

no known instability.

10.3 Possibility of hazardous reactions

Can react violently with organic material. No further data available.

10.4 Conditions to avoid

No more required.

10.5 Incompatible materials

no additional data available

10.6 Hazardous decomposition products

In the original package all parts/all reagents are safety and separated stored. Decompositions are not observed during the expiration period under recommended conditions.

SECTION 11: Toxicological information

11.1 Information on the hazard classes according regulation (EC) 1272/2008

Following information is valid for pure substances. Quantitative data on the toxicity of this product are not available.

28 mL Mn-2

Chemical:	<i>ammonia solution</i>	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 (Item 53.)
Japan CSCL/PRTR:	not listed, Japan PDSCL: Deleterious Substance	
Japan ISHL:	listed ≥0,2%/≥0,1%, Article 57-2 (SDS required)	
South Korea TCCA:	not listed	
Korea Exist.Chem.Inventory:	KE-01688, >10% Toxic 97-1-184	
LD50 orl rat :	350 mg/kg	
LC ₅₀ ihl hmn :	5,000 mg/L	
LC50 ihl rat :	2000 ppm/4H	

Acute Effects: Cause after inhalation of vapours/dust, impairments of health when ingested in small quantities.

30 mL Mn-1

Chemical:	<i>paraformaldehyde</i>	CAS No.: 30525-89-4
TSCA Inventory:	listed	California Proposition 65 List: not listed
Australia NICNAS:	not listed	Canada CEPA 1999: DSL Yes
Japan CSCL/PRTR:	not listed, Japan PDSCL: not listed	
Japan ISHL:	Article 57-2 (SDS required)	
South Korea TCCA:	not listed	
LD50 orl rat :	592 mg/kg	

Acute Effects: Cause after skin contact, impairments of health when ingested in small quantities. May cause sensitization by skin contact, also in repeated contact of small amounts.
Carcinogenic Effects: Suspected of causing cancer.

Chemical:	<i>hydroxylammonium chloride</i>	CAS No.: 5470-11-1
TSCA Inventory:	listed	California Proposition 65 List: not listed
Exposure Routes:	-	
Symptoms:	-	
Australia NICNAS:	not listed	Canada CEPA 1999: DSL Yes



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Japan CSCL/PRTR: not listed, Japan PDSCL: Deleterious Substance
 Japan ISHL: not listed
 South Korea TCCA: not listed
 Korea Exist.Chem.Inventory: KE-20602, >1% Toxic 97-1-411
 LD50 orl rat : 141 mg/kg
 Acute Effects: Cause after skin contact, impairments of health when ingested in small quantities. May cause sensitization by skin contact, also in repeated contact of small amounts.
 Carcinogenic Effects: Suspected of causing cancer.
 TRGS 907 (DE): Sh

22 mL Mn-3

Chemical: *hydroxylammonium chloride* CAS No.: 5470-11-1
 TSCA Inventory: listed California Proposition 65 List: not listed
 Exposure Routes: -
 Symptoms: -
 Australia NICNAS: not listed Canada CEPA 1999: DSL Yes
 Japan CSCL/PRTR: not listed, Japan PDSCL: Deleterious Substance
 Japan ISHL: not listed
 South Korea TCCA: not listed
 Korea Exist.Chem.Inventory: KE-20602, >1% Toxic 97-1-411
 LD50 orl rat : 141 mg/kg
 Acute Effects: Cause after oral intake, skin contact, impairments of health when ingested in small quantities.
 Chronic Effects: May cause sensitization by skin contact, also in repeated contact of small amounts. May cause damage to organs through prolonged or repeated exposure.
 Carcinogenic Effects: Suspected of causing cancer.
 TRGS 907 (DE): Sh

Chemical: *methanol* CAS No.: 67-56-1
 TSCA Inventory: listed California Proposition 65 List: listed, developmental
 ACGIH: 200 ppm / 160 mg/m³
 Exposure Routes: inhalation, skin absorption, ingestion, skin and/or eye contact
 Target Organs: Eyes, skin, respiratory system, central nervous system, gastrointestinal tract
 Symptoms: irritation eyes, skin, upper respiratory system; headache, drowsiness, dizziness, nausea, vomiting; visual disturbance, optic nerve damage (blindness)
 Australia NICNAS: Canada CEPA 1999: DSL yes
 Japan CSCL/PRTR: PAC yes, Japan PDSCL: Deleterious Substance
 Japan ISHL: listed ≥0,3%/≥0,1%, Article 57-2 (SDS required)
 South Korea TCCA: Accident Precaution Chemical yes
 Korea Exist.Chem.Inventory: KE-23193, Toxic 97-1-80
 LD50 orl rat : 5628 mg/kg
 LC_{Low} ihl rat : 64,000 mg/L/4H
 LC_{Low} orl hmn : 143 mg/kg
 LC50 ihl rat : >80 mg/L/4H
 LD50 orl mus : 7300 mg/kg
 Acute Effects: Cause after oral intake, impairments of health when ingested in small quantities.
 Chronic Effects:
 TRGS 905 (DE): R F C

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.

28 mL Mn-2

Chemical: *ammonia solution* CAS No.: 1336-21-6
 PNEC (fresh water) : 0.0011 mg/L
 PNEC = Predicted No Effect Concentration
 LC50 fish/96h : 0,89 mg/L
 EC50 daphnia/48h : 101 mg/L
 Water hazard class (DE): 2 WGK No.: 0211



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Storage class (VCI): 8 B

30 mL Mn-1

Chemical: *paraformaldehyde* CAS No.: 30525-89-4
 Water hazard class (DE): 2
 Storage class (VCI): 11

Chemical: *hydroxylammonium chloride* CAS No.: 5470-11-1
 LC50 *leuciscus idus*/96h : 1-10 mg/L
 Water hazard class (DE): 3
 Storage class (VCI): 4.1 A

22 mL Mn-3

Chemical: *hydroxylammonium chloride* CAS No.: 5470-11-1
 LC50 *leuciscus idus*/96h : 1-10 mg/L
 Water hazard class (DE): 3
 Storage class (VCI): 4.1 A

Chemical: *methanol* CAS No.: 67-56-1
 PNEC (fresh water) : 20.8 mg/L
 PNEC = Predicted No Effect Concentration
 LC50 *daphnia magna*/48h : [24h] 23.5 g/L
 LC50 *pimephales promelas*/96h : 29.4 g/L
 LC50 fish/96h : 15.4 g/L
 EC50 *daphnia*/48h : >10 g/L
 IC50 *scenedesmus quadricauda*/72h : [IC5 8d] 8000 mg/L
 EC10 *pseudomonas putida*/16h : [EC5] 6.6 g/L
 Water hazard class (DE): 2 WGK No.: 0145
 Dispersion coefficient (o/w) : -0,77
 Storage class (VCI): 3

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.



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SECTION 14: Transport information

14.1. UN number: 3316
14.2. UN proper shipping name: Chemical Kit
14.3. Class: 9 **14.4. Packing group:** II
Road transport ADR
 Classification code: M11 Tunnel restriction code: E
 Limited Quantity: acc. ADR 3.3.1/251: see LQ in Alternative declaration for transportation
Air transport ICAO
 PAX: 960 max. weight PAX: 10 KG
 CAO: 960 max. weight CAO: 10 KG
Maritime transport IMDG
 EmS: F-A, S-P Storage category: A

Or use **Alternative declaration for transportation:**
 UN No.: (see below) class 8 III, **Excepted Quantities** ($\leq 30 \text{ mL} / \sum \leq 1 \text{ L}$) = ADR/ IATA E1
 or

14.1 UN number: 3266 **14.2 UN proper shipping name:** Corrosive liquid, basic, inorganic, n.o.s. (ammonia solution)
14.3 Class: 8 **14.4 Packing group:** III
Road transport ADR
 Classification code: C5
 Limited Quantity: 5 L Tunnel restriction code: E
 Excepted Quantity: E 1
Air transport ICAO
 Limited Quantity: LQ7
 Excepted Quantity: E 1
 PAX: 852 max. weight PAX: 5 L
 CAO: 856 max. weight CAO: 60 L
Maritime transport IMDG
 EmS: F-A, S-B Storage category: A

14.5 Environmental hazards

none, contains only small quantities of hazardous substances

14.6 Special precautions for user

not necessary

14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code

Not applicable.

SECTION 15: Regulatory information

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

Chemicals Prohibition Ordinance - (DE: ChemVerbotsV), aktualisiert Jan 2017
 Dangerous Substances Protection Act (DE: Chemikaliengesetz - ChemG), Aug 2013, Stand: Okt 2020
 Ordinance on protection against dangerous substances (E: Gefahrstoffverordnung - GefStoffV), Nov 2010, Stand: Mrz 2017
 TRGS 201, Classification and labeling of activities involving hazardous substances, Feb 2017
 TRGS 220, National aspects when preparing safety data sheets, Jan 2017
 TRGS 400, Risk assessment for activities involving hazardous substances, Jul 2017
 TRGS 401, Skin contact hazard - identification, assessment, action, Jun 2008, status: Feb 2011
 BekGS 408, Application of the GefStoffV and the TRGS with the entry into force of the CLP regulation, December 2009, status: Jan 2012
 TRGS 500, Protective measures, Mai 2008
 TRGS 510, Storage of hazardous substances in portable containers from March 2013, status: Oct 2015
 Chapter 4, Measures when storing hazardous substances up to 50 kg (small quantity regulation)
 Wasserhaushaltsgesetz - WHG, Section 3 Handling substances hazardous to water, Jul 2009, status: Aug 2016
 TRGS 561, Activities involving carcinogenic metals and their compounds, Oct 2017
 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



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SECTION 16: Other information

16.1 Changes compared to the last version

in preparation

16.2 List of H and P phrases

16.2.1 List of relevant H phrases

H226	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.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
H351	Suspected of causing cancer.
H371	May cause damage to organs.
H373	May cause damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.

16.2.2 List of relevant P phrases

P201	Obtain special instructions before use.
P260sh	Do not breathe dust/vapours.
P261sh	Avoid breathing dust/vapours.
P264W	Wash with water thoroughly after handling.
P280sh	Wear protective gloves/eye protection.
P303+361+353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
P305+351+338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER/doctor.
P330	Rinse mouth.

16.3 Recommended restriction on use

Only for professional user.

Look about employee restrictions for young people (f. ex. 94/33/EC or DE § 22 JArbSchG)!

Look about employee restrictions for pregnant women and nursing women (f.ex. 92/85/EEC or for DE §§ 11-13 MuSchG 2017)!

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

16.4 Sources of key data

KÜHN, BIRETT leaflets on dangerous working materials

Directive 1999/92/EG Minimum requirements to improve the safety and health protection of workers at risk from potentially explosive atmospheres

Directive 2004/37/EC on the protection of workers from the risks related to exposure to carcinogens or mutagens at work SUVA .CH, limit values in the air at work 2009, revised on 01/2009

Regulation 790/2009/EU Adaptation of the CLP Regulation 1272/2008/EU to technical and scientific progress

Regulation 453/2010/EU REACH – REQUIREMENTS FOR THE PREPARATION OF SAFETY DATA SHEET

TRGS 907, German engineering rules for listing substances and causes of sensitization, updated November 2011

Regulation 487/2013/EU, 4. Adaptation of the CLP regulation to technical and scientific progress

TRGS 905, German engineering rules for carcinogenic and mutagenic substances, as of March 18, 2016

Regulation 669/2018/EU, 4. Adaptation of the CLP regulation to technical and scientific progress

Regulation 1480/2018/EU, 4. Adaptation of the CLP regulation to technical and scientific progress

TRGS 900, German engineering rules on limit values in the air at work, as of 03/2019

Regulation 878/2020/EU

Regulation 849/2021/EU, 4. Adaptation of the CLP regulation to technical and scientific progress

Revisions/Updates

Reason for revision: 2014-02 Corrected structure of the sections according to Regulation 453/2010/EU, if necessary

2014-04 Adjustment of Regulation 487/2013/EU

2016-03 Adjustment of Regulation 1221/2015/EU

2017-11 adaptation of the ECHA registration dossier

2022-11 Adjustment of Regulation 878/2020/EU

16.5 Further information

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product to which the information refers. Accordingly MACHEREY-NAGEL GmbH & Co. KG will not be responsible for damages resulting from use of or reliance upon this information. See terms and conditions at the end of our price lists for additional information.

16.6 Legend / Abbreviations

- acc: according
- ADR: Convention concerning the International Carriage of Dangerous Goods by Road
- Act: acute
- BAT: biological workplace tolerance value
- CAO: Cargo Aircraft Only
- Carc: carcinogen
- CAS: Chemical Abstracts Service
- CLP: Classification, Labelling and Packaging regulation
- CMR: carcinogen, mutagen, reproduction toxic
- Corr: corrosive
- COD: chemical oxygen demand
- CSCL: Chemical Substance Control Law (Jp)
- Dam: damage
- DNEL: Derived No-Effect Level (for workers)
- derm: dermal
- dog: dog
- EC10: Concentration causing a toxic effect in 10% of the test organisms
- EC: European Community
- EC-Nr: Substance number of the EC substance inventory
- EmS: Guide to accident management measures on ships
- EU: European Union
- fish: fish (not specified)
- GHS: Global Harmonized System of Classification and Labeling of Chemicals
- gpg: guinea pig
- ICAO: International Civil Aviation Organization
- ihl: inhaled
- IMDG: International Maritime Dangerous Goods Code
- intrav: intravenous
- ipt: intraperitoneal
- ISHL: Industrial Safety and Health Law (Jp)
- LC50: 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: fisch, rainbow trout
- orl: oral
- OSHA: Occupational Safety and Health Administration
- PAX: transport on passenger planes allowed
- PBT: persistent, bioaccumulating, toxic substance
- pH: pH value
- pimephales promelas: fisch, fathead minnow
- PNEC: Predicted No Effect Concentration
- PROC 15: Process category 'for laboratory use'
- PRTR: Law for PRTR and Promotion of Chemical Management (Jp)
- PVC: polyvinyl chloride
- quail: bird, quail
- rat: rat
- rbt: rabbit
- RD: rapidly degradable
- RE: repeated
- REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals
- REF: item number, reference number
- Reg.No.: rRegistration number
- Repr: harmful to reproduction
- Resp: respiratory
- RIP: REACH Implementations Projects
- scu: sub cutan
- SDS: safety data sheet
- Sens: sensitisation
- STEL: short term exposure limit



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- STOT: Specific Target Organ Toxicity
- SVHC: Substance of Very High Concern
- t/a: tons per year
- TCCA: Toxic Chemicals Control Act (S. Korea)
- Tox: toxic
- TSCA: The Toxic Substances Control Act (US)
- TWA: time weighted average
- TRGS: technical regulations (DE)
- vPvB: very persistent, very bioaccumulating substance

16.7 Training advice

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



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