

Safety Data Sheet

according to Regulations REACH 1907/2006/EC

REF: 931029

VISOCOLOR ECO Total Hardness

Page: 1/13

Printing date: 03.08.2026

Date of issue: 30.09.2022

Version: 2.2.2.2

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

1.1 Product identifier

REF 931029
Product name VISOCOLOR ECO Total Hardness

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 8 mL GH-1
2 x 30 mL GH-2

UFI: XPDU-83EC-K20D-GDK7

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
Valenciennner 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:

<<https://www.mn-net.com/SDS>>

SECTION 2: Hazard identification

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



GHS02



GHS07

Signal word

WARNING

Hazard identification

H226

H315

H319

Hazard classes/categories

Flam. Liq. 3

Skin Irrit. 2

Eye Irrit. 2

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

8 mL GH-1



GHS02



GHS07

Signal word

WARNING

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Hazard identification	Hazard classes/categories
H226	Flam. Liq. 3
H315	Skin Irrit. 2
H319	Eye Irrit. 2

30 mL GH-2

Signal word

Do not need labelling as hazardous

-

No hazard class

List of H phrases: see section 16.2

2.2 Label elements according regulation (EC) 1272/2008

According **CLP directive** inner packages must be only labelled with GHS symbol(s) and product 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).

8 mL GH-1



GHS02



GHS07

Signal word: WARNING

30 mL GH-2

Do not need labelling as hazardous

Signal word: -

Label elements of the complete product



GHS02



GHS07

Signal word: WARNING

2.3 Other hazards

Possible hazards from physicochemical properties

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

Information pertaining to particular risks to the 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

8 mL GH-1



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Substance name: *triethanolamine*
CAS No.: 102-71-6

Substance rating: H315, Skin Irrit. 2, H319, Eye Irrit. 2
Formula: $C_6H_{15}NO_3$
Pseudonym (de): 2,2',2''-Nitrilotriethanol, TEA, Tris(2-hydroxyethyl)amin
REACH Reg. No.: 01-2119486482-31-xxxx

Dual-use: The application of this chemical is exempt from the regulation 2017/2268/EU (see IC350 remark 4).

EC No.: 203-049-8
Concentration: 20 - <45 %
acc. CLP (GHS): H315, Skin Irrit. 2, H319, Eye Irrit. 2

Substance name: *ethanol*
CAS No.: 64-17-5
(denatured with 1% 2-butanone / 1% 2-propanol)

Substance rating: H225, Flam. Liq. 2
Formula: C_2H_6O ; C_2H_5OH
Pseudonym (de): Äthylalkohol, vergällter Spiritus
REACH Reg. No.: 01-2119457610-43-xxxx

EC No.: 200-578-6
Concentration: 20 - <35 %
acc. CLP (GHS): H226, Flam. Liq. 3
Indice No.: 603-002-00-5

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

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

30 mL GH-2

Substance name: *ammonia solution*
CAS No.: 1336-21-6

Substance rating: H314, Skin Corr. 1 B, H335, resp. irrit. STOT SE 3, H400, Aquatic Acute 1
Formula: $NH_3 \cdot H_2O$
Pseudonym (de): Salmiakgeist
REACH Reg. No.: 01-2119488876-14-xxxx, 01-2119982985-14-XXXX

EC No.: 215-647-6
Concentration: 0,1 - <1 %
acc. CLP (GHS): The criteria for classification are not fulfilled.
Indice No.: 007-001-01-2

Substance name: *ethylendinitrilo tetraacetic acid, di Na-salt (EDTA-Na)*
CAS No.: 6381-92-6

Substance rating: H332, Acute Tox. 4 inh., H373, resp. irrit. STOT SE 3
Formula: $C_{10}H_{14}N_2Na_2O_8 \cdot 2H_2O$
Pseudonym (de): Titriplex® III
EC No.: 205-358-3
Concentration: 0,1 - <1 %
acc. CLP (GHS): The criteria for classification are not fulfilled.

3.3 Remarks

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

List of H and P phrases: see section 16.2.

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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.

4.1.1 After SKIN Contact

Remove contaminated clothing. Rinse the affected skin or mucous membrane thoroughly under running water. (If possible) use soap.

4.1.2 After EYE Contact

After contact with the eyes rinse thoroughly under running water with the eyelid wide open with eye washing bottle, eye douche or running water (protect intact eye).

4.1.3 After INHALATION of vapours

After inhalation of foam or vapour fresh air should be inhaled. Keep airways free. ---

4.1.4 After ORAL Intake

After oral intake lots of water should be drunk after it has been ingested.

4.2 Most important symptoms and effects, both acute and delayed

There are no known delayed symptoms or effects for this product.

4.3 Indication of any immediate medical attention and special treatment needed

No additionally recommendations. ---

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. 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.

5.3 Advice for firefighters

No, for listed product. Product package burns like paper or plastic.

5.4 Additional information

no data available

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Do not breathe vapours. Regular staff training is necessary.

6.2 Environmental precautions

PBT: not applicable

vPvB: not applicable

6.3 Methods and material for containment and cleaning up

Bind any escaping liquid with inert absorbent.
Collect small amounts of leaked liquid and flush with water into drains.

6.4 Reference to other sections

no data available

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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 from MACHEREY-NAGEL. Storage class (German chemical industry): see chapter 12.1

Storage class (VCI): 3

Water hazard class (DE): 2

7.2.1 Requirements for stock rooms and containers

Keep original product packages tightly closed during handling and storage.

7.3 Specific end use(s)

Product for analytical use.

SECTION 8: Exposure controls /personal protection

8.1 Control parameters

8 mL GH-1

Chemical: triethanolamine

CAS No.: 102-71-6

DNEL: [derm] 6.3; [inh] 5 mg/m³

DNEL = Derived No-Effect Level (for workers)

PNEC (fresh water): 0.32 mg/L

PNEC = Predicted No Effect Concentration

TRGS 900 (DE): - DFG: 5 E mg/m³

E/e respirable

Short-term exposure factor: 1, (2)

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

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

NIOSH: not listed

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

OSHA: not listed

Chemical: ethanol

CAS No.: 64-17-5

DNEL: [derm] 343 mg/kg; [inh] 950 mg/m³

DNEL = Derived No-Effect Level (for workers)

PNEC (fresh water): 0.96 mg/L

PNEC = Predicted No Effect Concentration

TRGS 900 (DE): 200 mL/m³ / 380 mg/m³

E/e respirable

Short-term exposure factor: 4 (II), Y

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

SUVA(CH) MAK value: 500 ppm / 960 mg/m³

NIOSH: [TWA] 1000 ppm / 1900 mg/m³

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

OSHA: [TWA] 1000 ppm / 1900 mg/m³

Chemical: indicator dye(s)

CAS No.: -

30 mL GH-2

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

CAS No.: 6381-92-6

DNEL: [inh] 1.5 mg/m³

DNEL = Derived No-Effect Level (for workers)

PNEC (fresh water): 2.2 mg/L

PNEC = Predicted No Effect Concentration

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 Effect 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

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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

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.

8.2.4 Skin protection

Not necessary.

8.2.5 Personal hygiene

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

8.2.6 Thermal hazards

no data available

8.3 Limitation and monitoring of environmental exposure

Do not release product into environment.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

8 mL GH-1

a) State of aggregation:	liquid
b) Colour:	green
c) Odor:	alcoholic
d) Melting point:	no data available
e) Boiling point:	no data available
f) Flammability:	no data available
g) Explosive limits (lower / upper):	no data available
h) Flash point:	27 °C
i) Flashing temperature:	no data available
j) Decomposition temperature:	no data available
k) pH value:	10
l) Kinematic viscosity:	no data available
m) Solubility in water:	no data available
n) Dispersion coefficient (K _{ow}):	no data available
o) Vapour pressure (20°C):	no data available
p) Specific gravity:	no data available
q) Relative vapour density (air=1):	no data available
r) Particle size:	no data available

30 mL GH-2

a) State of aggregation:	liquid
b) Colour:	colourless
c) Odor:	aminic
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



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k) pH value:	10,5
l) Kinematic viscosity:	no data available
m) Solubility in water:	no data available
n) Dispersion coefficient ($K_{o/w}$):	no data available
o) Vapour pressure (20°C):	no data available
p) Specific gravity:	no data available
q) Relative vapour density ($\rho_{air=1}$):	no data available
r) Particle size:	no data available

9.2 Other information

9.2.1 Information on physical hazard classes

no data available

9.2.2 Other safety-related parameters

No data is available for the other parameters for the mixtures, since no registration and no chemical safety report is required.

□□

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

No further data available.

10.4 Conditions to avoid

no data available

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.

8 mL GH-1

Chemical:	<i>triethanolamine</i>	CAS No.: 102-71-6
TSCA Inventory:	listed	California Proposition 65 List: not listed
Australia NICNAS:	not listed	Canada CEPA 1999: DSL Yes
Japan CSCL/PRTR:	PAC Yes, Japan PDSCCL: not listed	
Japan ISHL:	listed $\geq 0,1\%/\geq 0,1\%$, Article 57-2 (SDS required)	
South Korea TCCA:	not listed	
Korea Exist.Chem.Inventory:	KE-25940	
LD50 orl rat :	> 5000 mg/kg	

Chemical: *ethanol*

Chemical:	<i>ethanol</i>	CAS No.: 64-17-5
TSCA Inventory:	listed	California Proposition 65 List: not listed
ACGIH:	1000 ppm	
Exposure Routes:	inhalation, ingestion, skin and/or eye contact	
Target Organs:	Eyes, skin, respiratory system, central nervous system, liver, blood, reproductive system	
Symptoms:	irritation eyes, skin, nose; headache, drowsiness, lassitude (weakness, exhaustion), narcosis; cough;	
liver damage; anemia; reproductive, teratogenic		
Australia NICNAS:	not listed	Canada CEPA 1999: DSL yes



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Japan CSCL/PRTR: not listed, Japan PDSCL: not listed
Japan ISHL: listed $\geq 0,1\%$ / $\geq 0,1\%$, Article 57-2 (SDS required)
South Korea TCCA: not listed
Korea Exist.Chem.Inventory: KE-13217
LD50 orl rat : 6200 mg/kg
LC_{Low} ihl gpg : 21,900 mg/L
LC_{Low} orl hmn : 1400 mg/kg
LC50 ihl mus : 123,4 mg/L/4H
LC50 ihl rat : 115,9-133,8 mg/L/4H
LD50 orl mus : 3450 mg/kg

TRGS 905 (DE): K5, M5, R_F C

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

CAS No.: -

30 mL GH-2

Chemical: *ethylenedinitrilo tetraacetic acid, di Na-salt (EDTA-Na)*
TSCA Inventory: listed (CAS 139-33-3)
LD50 orl rat : 2800 mg/kg

CAS No.: 6381-92-6

Chemical: *ammonia solution* CAS No.: 1336-21-6
TSCA Inventory: listed California Proposition 65 List: not listed
Exposure Routes: inhalation, ingestion (solution), skin and/or eye contact (solution/liquid)
Target Organs: Eyes, skin, respiratory system
Symptoms: irritation eyes, nose, throat; dyspnea (breathing difficulty), wheezing, chest pain; pulmonary edema;
pink frothy sputum; skin burns, vesiculation; I
Australia NICNAS: not listed Canada CEPA 1999: DSL yes, Toxic Substances (Schedule 1) Yes
(Item 53.)
Japan CSCL/PRTR: not listed, Japan PDSCL: Deleterious Substance
Japan ISHL: listed $\geq 0,2\%$ / $\geq 0,1\%$, 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_{Low} ihl hmn : 5,000 mg/L
LC50 ihl rat : 2000 ppm/4H

11.2 Other hazards

Possible endocrine disrupting effects
no data available

Other information
no additional data available

SECTION 12: Ecological information

12.1 Toxicity

Following information is valid for pure substances.

8 mL GH-1

Substance name: *triethanolamine* CAS-Nr.: 102-71-6
PNEC (fresh water) : 0.32 mg/L
PNEC = Predicted No Effect Concentration = concentration at which no effect on the environment is expected
LC50 fish/96h : >1000 mg/L
EC50 daphnia/48h : >1000_{24h} mg/L
Water hazard class (DE): 1 WGK No.: 0201
Storage class (VCI): 12

Substance name: *ethanol* CAS-Nr.: 64-17-5
PNEC (fresh water) : 0.96 mg/L
PNEC = Predicted No Effect Concentration = concentration at which no effect on the environment is expected
LC50 daphnia magna/48h : >100 mg/L
LC50 pimephales promelas/96h : 13400 - 15100 mg/L
LC50 leuciscus idus/96h : [48h] 8140 mg/L



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LC50 fish/96h : 13 g/L
EC50 daphnia/48h : 9.3-14.2 g/L
IC50 scenedesmus quadricauda/72h : [7d] 5000 mg/L
EC10 pseudomonas putida/16h : [EC5] 6500 mg/L
Water hazard class (DE): 1 WGK No.: 0096
Storage class (VCI): 3

Substance name: *indicator dye(s)*
Storage class (VCI): 12-13

CAS-Nr.: -

30 mL GH-2

Substance name: *ethylenedinitrilo tetraacetic acid, di Na-salt (EDTA-Na)* CAS-Nr.: 6381-92-6
PNEC (fresh water): 2.2 mg/L
PNEC = Predicted No Effect Concentration = concentration at which no effect on the environment is expected

LC50 fish/96h : [4d] 41-1592 mg/L
EC50 daphnia/48h : 140 mg/L
IC50 scenedesmus quadricauda/72h : [72h] 2.77-1000 mg/L
EC10 pseudomonas putida/16h : [EC10, 30h] 500 mg/L
Water hazard class (DE): 2
Storage class (VCI): 12-13

Substance name: *ammonia solution* CAS-Nr.: 1336-21-6

PNEC (fresh water): 0.0011 mg/L
PNEC = Predicted No Effect Concentration = concentration at which no effect on the environment is expected

LC50 fish/96h : 0.89 mg/L
EC50 daphnia/48h : 101 mg/L
Water hazard class (DE): 2 WGK No.: 0211
Storage class (VCI): 8 B

12.2 Persistence and degradability

12.3 Bioaccumulative potential

8 mL GH-1

Substance name: *triethanolamine* CAS-Nr.: 102-71-6
Dispersion coefficient (K_{ow}): -2,3
Substance name: *ethanol* CAS-Nr.: 64-17-5
Dispersion coefficient (K_{ow}): -0,31

30 mL GH-2

Substance name: *ethylenedinitrilo tetraacetic acid, di Na-salt (EDTA-Na)* CAS-Nr.: 6381-92-6
Dispersion coefficient (K_{ow}): -4,3

12.4 Mobility in soil

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.



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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 IATA DGR
 Limited Quantity: PAX: 960 max. quantity PAX: 10 KG
 CAO: 960 max. quantity CAO: 10 KG

Maritime transport IMDG
 EmS: F-A, S-P Staukategorie: A

Or use **Alternative declaration for transportation:**
 UN 1993 class 3 III, **Excepted Quantities** ($\leq 30 \text{ mL}/\Sigma \leq 1 \text{ L}$) = ADR/ IATA E1
 or

14.1 UN number: 1993
14.2 UN proper shipping name: Flammable liquid, n.o.s. (ethanol mixture)
14.3 Class: 3
14.4 Packing group: III

Road transport ADR
 Classification code: F1 Tunnel restriction code: D/E
 Limited Quantity: 5 L
 Excepted Quantity: E 1
 Special instructions: 274, 601

Air transport IATA DGR
 Limited Quantity: PAX: 355 max. quantity PAX: 60 L
 CAO: 366 max. quantity CAO: 220 L
 Excepted Quantity: E 1

Maritime transport IMDG
 EmS: F-E, S-E Staukategorie: A
 Special instructions: 223, 274, 955

- 14.5 Environmental hazards**
 none, contains only small quantities of hazardous substances
- 14.6 Special precautions for user**
 not necessary
- 14.7 Carriage in bulk by sea in accordance with IMO instruments**
 Not applicable.

SECTION 15: Regulatory information

- 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
 Dangerous Substances Protection Act (DE: Chemikaliengesetz - ChemG), Aug 2013, Stand: Okt 2020
 Ordinance on protection against dangerous substances (E: Gefahrstoffverordnung - GefStoffV), Nov 2010, Stand: Mrz 2017
 TRGS 201, Classification and labeling of activities involving hazardous substances, Feb 2017
 TRGS 220, National aspects when preparing safety data sheets, Jan 2017
 TRGS 400, Risk assessment for activities involving hazardous substances, Jul 2017
 BekGS 408, Application of the GefStoffV and the TRGS with the entry into force of the CLP regulation, December 2009, status: Jan 2012
 MN leaflet/instructions for use, also at www.mn-net.com
 If necessary, observe other country-specific regulations.
- 15.2 Chemical safety assessment**
 no data available



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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

H	in preparation
H226	Flammable liquid and vapour.
H315	Causes skin irritation.
H319	Causes serious eye irritation.

16.2.2 List of relevant P phrases

16.3 Recommended restriction on use

Only for professional user.
An individual package of this product or test kit has a moderate hazardous potential.

16.4 Sources of key data

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

Regulation 669/2018/EU, adaptation of Regulation 1272/2008/EC to technical and scientific progressText (11th ATP)
Regulation 1480/2018/EU, adaptation of regulation 1272/2008/EG to technical and scientific progress (13th ATP)
Regulation 521/2019/EU, adaptation of regulation 1272/2008/EG to technical and scientific progress (12th ATP)
TRGS 900, German rules of technology on limit values in the air at work, as of 03/2019
Regulation 217/2020/EU, adaptation of Annex VI, Part 3, of Regulation 1272/2008/EC to technical and scientific progress (14th ATP)
Regulation 878/2020/EU, adaptation of Annex II of the REACH regulation 1907/2006/EG
Regulation 1182/2020/EU, adaptation of Annex VI, Part 3, of Regulation 1272/2008/EC to technical and scientific progress (15th ATP)
Regulation 643/2021/EU, adaptation of Annex VI, Part 1, of Regulation 1272/2008/EC to technical and scientific progress (16th ATP)
Regulation 849/2021/EU, adaptation of Annex VI, Part 3, of Regulation 1272/2008/EC to technical and scientific progress (17th ATP)
Regulation 692/2022/EU, adaptation of Annex VI, Part 1, of Regulation 1272/2008/EC to technical and scientific progress (18th ATP)

revisions/updates

Reason for revision: 2014-02 Corrected structure of the sections according to Regulation 453/2010/EU, if necessary
2014-04 adjustment according Regulation 487/2013/EU
2016-03 adjustment according Regulation 1221/2015/EU
2017-08 adjustment according the Ordinance on Ethanol Denaturation 2016/1867/EU
2017-11 adjustment according the ECHA registration dossier
2022-11 adjustment according Regulation 878/2020/EU

16.5 Further information

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16.6 Legend / Abbreviations

acc:	according
ADR:	Convention concerning the International Carriage of Dangerous Goods by Road
Act:	acute
BAT:	biological workplace tolerance value
CAO:	Cargo Aircraft Only
Carc:	carcinogen
CAS:	Chemical Abstracts Service
CLP:	Classification, Labelling and Packaging regulation
CMR:	carcinogen, mutagen, reproduction toxic
Corr:	corrosive



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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 spezified)
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
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

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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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