

Safety Data Sheet

according to Regulations REACH 1907/2006/EC

REF: 985044	NANOCOLOR Hardness Ca/Mg	Page: 1/13
Printing date: 27.09.2023	Date of issue: 26.01.2023	Version: 2.2.2.5

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

1.1 Product identifier

REF 985044
 Product name NANOCOLOR Hardness Ca/Mg

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.

20 x 6 mL Hardness Ca/Mg (R0) UFI: 2M8W-W3AA-A20E-YTWS
 1 x 20x 100 mg NANOFIX Hardness Ca/Mg (R2)
 1 x 5 mL Hardness Ca/Mg (R3)

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
 Schöpperlenstr. 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
H315	Skin Irrit. 2
H319	Eye Irrit. 2
H360FD	Repr. 1 B

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

6 mL Hardness Ca/Mg (R0)



MACHEREY-NAGEL GmbH & Co. KG
 Valencienner Str. 11
 52355 Düren · Germany
www.mn-net.com

DE Tel.: +49 24 21 969-0 info@mn-net.com
 CH Tel.: +41 62 388 55 00 sales-ch@mn-net.com
 FR Tel.: +33 388 68 22 68 sales-fr@mn-net.com
 US Tel.: +1 888 321 62 24 sales-us@mn-net.com

Safety Data Sheet

according to Regulations REACH 1907/2006/EC

REF: 985044	NANOCOLOR Hardness Ca/Mg	Page: 2/13
Printing date: 27.09.2023	Date of issue: 26.01.2023	Version: 2.2.2.5

Signal word	DANGER
Hazard identification	Hazard classes/categories
H315	Skin Irrit. 2
H319	Eye Irrit. 2
H360FD	Repr. 1 B

20x 100 mg NANOFIX Hardness Ca/Mg (R2)

Signal word	Do not need labelling as hazardous
No hazard class	-

5 mL Hardness Ca/Mg (R3)

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). Inner packages up to 10 mL need max. 2 symbols (Annex I - 1.5.2.4.1 / 2). Harmful chemicals/mixtures with signal word: **WARNING** must not be labelled with H and P phrases **until 125 mL** (EU 1272/2008 Annex I - 1.5.2).

6 mL Hardness Ca/Mg (R0)



Signal word: DANGER
H360FD
May damage fertility. May damage the unborn child.
P201, P202, P280sh, P308+313, P405, P501
Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves/eye protection. IF exposed or concerned: Get medical advice/attention. Store locked up. Dispose of contents/container to regulated waste treatment.

20x 100 mg NANOFIX Hardness Ca/Mg (R2)

Do not need labelling as hazardous
Signal word: -

5 mL Hardness Ca/Mg (R3)

Do not need labelling as hazardous
Signal word: -

Label elements of the complete product



Signal word: DANGER
H360FD
May damage fertility. May damage the unborn child.
P201, P202, P280sh, P308+313, P405, P501
Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves/eye protection. IF exposed or concerned: Get medical advice/attention. Store locked up. Dispose of contents/container to regulated waste treatment.



MACHEREY-NAGEL GmbH & Co. KG
Valencienner Str. 11
52355 Düren · Germany
www.mn-net.com

DE Tel.: +49 24 21 969-0 info@mn-net.com
CH Tel.: +41 62 388 55 00 sales-ch@mn-net.com
FR Tel.: +33 388 68 22 68 sales-fr@mn-net.com
US Tel.: +1 888 321 62 24 sales-us@mn-net.com

Safety Data Sheet

according to Regulations REACH 1907/2006/EC

REF: 985044

NANOCOLOR Hardness Ca/Mg

Page: 3/13

Printing date: 27.09.2023

Date of issue: 26.01.2023

Version: 2.2.2.5

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.

Information pertaining to particular risks to human and possible symptoms

May damage fertility. May damage the unborn child.

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

6 mL Hardness Ca/Mg (R0)

Substance name: *boric acid*
CAS No.: 10043-35-3

Substance rating: H360FD, Repr. 1 B
Formula: H_3BO_3
Pseudonym (de): Orthoborsäure, E284
REACH Reg. No.: 01-2119486683-25-0024
SVHC listed: **listed (18/06/2010) Cand. Lst. REACH Art59(10)**
EC No.: 233-139-2
Concentration: 0,5 - <5,5 %
acc. CLP (GHS): H360FD, Repr. 1 B

Indice No.: 005-007-00-2

Substance name: *sodium hydroxide (solid)*
CAS No.: 1310-73-2

Substance rating: H290, Met. Corr. 1, H314, Skin Corr. 1 A
Formula: NaOH
Pseudonym (de): Ätznatron
REACH Reg. No.: 01-2119457892-27-xxxx
EC No.: 215-185-5
Concentration: 0,5 - <1 %
acc. CLP (GHS): H315, Skin Irrit. 2, H319, Eye Irrit. 2

Indice No.: 011-002-00-6

Substance name: *potassium chloride*
CAS No.: 7447-40-7

Substance rating: No criteria for classification or naming of chemical not required.
Formula: KCl
Pseudonym (de): KCl
REACH Reg. No.: 01-2119539416-36-xxxx
EC No.: 231-211-8
Concentration: 1 - <10 %
acc. CLP (GHS): The criteria for classification are not fulfilled.

20x 100 mg NANOFIX Hardness Ca/Mg (R2)

Substance name: *Phthalein purple (phthalein complexon)*
CAS No.: 2411-89-4

Substance rating: No criteria for classification or naming of chemical not required.
Formula: $C_{32}H_{32}N_2O_{12}$
Pseudonym (de): o-Cresolphthalein complexone
EC No.: 219-318-8
Concentration: 1 - <10 %
acc. CLP (GHS): The criteria for classification are not fulfilled.



Safety Data Sheet

according to Regulations REACH 1907/2006/EC

REF: 985044

NANOCOLOR Hardness Ca/Mg

Page: 4/13

Printing date: 27.09.2023

Date of issue: 26.01.2023

Version: 2.2.2.5

Substance name: *D-mannitol*
 CAS No.: 69-65-8

Substance rating: No criteria for classification or naming of chemical not required.
 Formula: $C_6H_{14}O_6$
 Pseudonym (de): Mannitol
 REACH Reg. No.: exempt, Annex IV
 EC No.: 200-711-8
 Concentration: 30 - <80 %
 acc. CLP (GHS): The criteria for classification are not fulfilled.

Substance name: *polyvinylpyrrolidone*
 CAS No.: 9003-39-8

Substance rating: No criteria for classification or naming of chemical not required.
 Formula: $(C_6H_9NO)_n$
 EC No.: 201-800-4
 Concentration: 40 - <70 %
 acc. CLP (GHS): The criteria for classification are not fulfilled.

5 mL Hardness Ca/Mg (R3)

Substance name: *ethylendioxibis(ethylennitrilo)-tetraacetic acid (Titrplex® VI)*
 CAS No.: 67-42-5

Substance rating: No criteria for classification or naming of chemical not required.
 Formula: $C_{14}H_{24}N_2O_{10}$
 Pseudonym (de): Titrplex® VI
 EC No.: 200-651-2
 Concentration: 1 - <10 %
 acc. CLP (GHS): The criteria for classification are not fulfilled.

3.3 Remarks

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

SECTION 4: First aid measures

4.1 Description of first aid measures

Place insured person out of danger zone to fresh air immediately. Ensure quiet, warmth, and provide resuscitation if necessary. If necessary contact medical advice.

- 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

CMR Effekte:

4.3 Indication of any immediate medical attention and special treatment needed



MACHEREY-NAGEL GmbH & Co. KG
 Valencienner Str. 11
 52355 Düren · Germany
www.mn-net.com

DE Tel.: +49 24 21 969-0 info@mn-net.com
 CH Tel.: +41 62 388 55 00 sales-ch@mn-net.com
 FR Tel.: +33 388 68 22 68 sales-fr@mn-net.com
 US Tel.: +1 888 321 62 24 sales-us@mn-net.com

Safety Data Sheet

according to Regulations REACH 1907/2006/EC

REF: 985044	NANOCOLOR Hardness Ca/Mg	Page: 5/13
Printing date: 27.09.2023	Date of issue: 26.01.2023	Version: 2.2.2.5

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

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

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). 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

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

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Handling in accordance with the test instruction, that comes with the product. Use a safety bottle when shaking test tubes.

7.2 Conditions for safe storage, including any incompatibilities

Safe storage is guaranteed in the original packaging. Products which are also classified as toxic must be kept under lock and key. Storage class (German chemical industry): see chapter 12.1

Storage class (VCI): 8B

Water hazard class (DE): 2

7.2.1 Requirements for stock rooms and containers

Keep original product packages tightly closed during handling and storage, so that they are not immediately accessible to outside parties.

7.3 Specific end use(s)

Product for analytical use.

SECTION 8: Exposure controls /personal protection

8.1 Control parameters

6 mL Hardness Ca/Mg (R0)

Chemical: *boric acid*

CAS No.: 10043-35-3

DNEL: [derm] 392 mg/kg bw/day; [inh] 8.3 mg/m³

DNEL = Derived No-Effect Level (for workers)

PNEC (fresh water): 2.9 mg/L
PNEC = Predicted No Effect Concentration

TRGS 900 (DE): 0.5 E mg/m³
E/e respirable



Safety Data Sheet

according to Regulations REACH 1907/2006/EC

REF: 985044

NANOCOLOR Hardness Ca/Mg

Page: 6/13

Printing date: 27.09.2023

Date of issue: 26.01.2023

Version: 2.2.2.5

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: [Bor][MAK] 1,8e/[STEL] 1,8e 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: *sodium hydroxide* CAS No.: 1310-73-2
 DNEL: 1 inh mg/m³
DNEL = Derived No-Effect Level (for workers)
 TRGS 900 (DE): (2 E) mg/m³
E/e respirable

Short-term exposure factor: (=1=, Y)
skin resorptive (H), respiratory sensitizable (Sa), skin sensitizable (Sh), teratogenic (Z) not securely excluded / (Y) certainly excluded
 SUVA(CH) MAK value: 2 e mg/m³
 NIOSH: 2 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 2 mg/m³

Chemical: *potassium chloride* CAS No.: 7447-40-7

20x 100 mg NANOFIX Hardness Ca/Mg (R2)
 Chemical: *Phthalein purple (phthalein complexon)* CAS No.: 2411-89-4

Chemical: *D-mannitol* CAS No.: 69-65-8

Chemical: *polyvinylpyrrolidone* CAS No.: 9003-39-8

5 mL Hardness Ca/Mg (R3)
 Chemical: *ethylendioxybis(ethylennitrilo)-tetraacetic acid (Titrplex® VI)* CAS No.: 67-42-5

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

Recommended to avoid contamination with these hazards.

8.2.5 Personal hygiene

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

8.2.6 Thermal hazards

no data available

8.3 Limitation and monitoring of environmental exposure

Do not release product into environment.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

6 mL Hardness Ca/Mg (R0)

- | | |
|--------------------------|-------------------|
| a) State of aggregation: | liquid |
| b) Colour: | colourless |
| c) Odor: | odorless |
| d) Melting point: | no data available |
| e) Boiling point: | no data available |



Safety Data Sheet

according to Regulations REACH 1907/2006/EC

REF: 985044

NANOCOLOR Hardness Ca/Mg

Page: 7/13

Printing date: 27.09.2023

Date of issue: 26.01.2023

Version: 2.2.2.5

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
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

20x 100 mg NANOFIX Hardness Ca/Mg (R2)

a) State of aggregation:	solid (lyophilized)
b) Colour:	colored
c) Odor:	odorless
d) Melting point:	no data available
e) Boiling point:	no data available
f) Flammability:	no data available
g) Explosive limits (lower / upper):	no data available
h) Flash point:	no data available
i) Flashing temperature:	no data available
j) Decomposition temperature:	no data available
k) pH value:	7-8
l) Kinematic viscosity:	no data available
m) Solubility in water:	no data available
n) Dispersion coefficient (o/w) :	no data available
o) Vapour pressure (20°C):	no data available
p) Specific gravity:	no data available
q) Relative vapour density (air=1) :	no data available
r) Particle size:	no data available

5 mL Hardness Ca/Mg (R3)

a) State of aggregation:	liquid
b) Colour:	colourless
c) Odor:	odorless
d) Melting point:	no data available
e) Boiling point:	no data available
f) Flammability:	no data available
g) Explosive limits (lower / upper):	no data available
h) Flash point:	no data available
i) Flashing temperature:	no data available
j) Decomposition temperature:	no data available
k) pH value:	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

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



MACHEREY-NAGEL GmbH & Co. KG
 Valenciener Str. 11
 52355 Düren · Germany
www.mn-net.com

DE Tel.: +49 24 21 969-0 info@mn-net.com
 CH Tel.: +41 62 388 55 00 sales-ch@mn-net.com
 FR Tel.: +33 388 68 22 68 sales-fr@mn-net.com
 US Tel.: +1 888 321 62 24 sales-us@mn-net.com

Safety Data Sheet

according to Regulations REACH 1907/2006/EC

REF: 985044	NANOCOLOR Hardness Ca/Mg	Page: 8/13
Printing date: 27.09.2023	Date of issue: 26.01.2023	Version: 2.2.2.5

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

Observe the storage temperature printed on it. 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.

6 mL Hardness Ca/Mg (R0)

Chemical:	<i>boric acid</i>	CAS No.:	10043-35-3
TSCA Inventory:	listed	California Proposition 65 List:	not listed
Australia NICNAS:	not listed	Canada CEPA 1999:	DSL yes
Japan CSCL/PRTR:	PRTR: ≥1,0%B class I, Japan PDSCCL: not listed		
Japan ISHL:	not listed		
South Korea TCCA:	not listed		
Korea Exist.Chem.Inventory:	KE-03499		
LD50 orl rat :	> 3765 mg/kg		
LC50 ihl rat :	2,12 mg/L/4H		

Carcinogenic Effects: May damage fertility. May damage the unborn child.

EU carcinogen:	R _D 1B, R _F 1B
TRGS 905 (DE):	R _E 2, R _F 2

Chemical: *sodium hydroxide*

CAS No.: 1310-73-2

TSCA Inventory:	listed
Exposure Routes:	inhalation, ingestion, skin and/or eye contact
Target Organs:	Eyes, skin, respiratory system
Symptoms:	irritation eyes, skin, mucous membrane; pneumonitis; eye, skin burns; temporary loss of hair
Japan CSCL/PRTR:	not listed, Japan PDSCCL: not listed
Japan ISHL:	listed ≥1,0%/≥1,0%, Article 57-2 (SDS required)
Korea Exist.Chem.Inventory:	KE-31487, >5% Toxic 97-1-136
LD50 orl rat :	500 mg/kg
LD50 orl mus :	40 mg/kg

Chemical: *potassium chloride*

CAS No.: 7447-40-7

TSCA Inventory:	listed
Korea Exist.Chem.Inventory:	KE-29086
LD50 orl rat :	2600 mg/kg

20x 100 mg NANOFIX Hardness Ca/Mg (R2)

Chemical:	<i>Phthalein purple (phthalein complexon)</i>	CAS No.:	2411-89-4
TSCA Inventory:	listed		

Chemical: *D-mannitol*

CAS No.: 69-65-8

TSCA Inventory:	listed
Korea Exist.Chem.Inventory:	KE-23061
LD50 orl rat :	13500 mg/kg



Safety Data Sheet

according to Regulations REACH 1907/2006/EC

REF: 985044	NANOCOLOR Hardness Ca/Mg	Page: 9/13
Printing date: 27.09.2023	Date of issue: 26.01.2023	Version: 2.2.2.5

LD50 orl mus : 22000 mg/kg

Chemical: *polyvinylpyrrolidone* CAS No.: 9003-39-8
 TSCA Inventory: listed
 Korea Exist.Chem.Inventory: KE-13324
 LD50 orl rat : > 2000 mg/kg

5 mL Hardness Ca/Mg (R3)

Chemical: *ethylendioxybis(ethylennitrilo)-tetraacetic acid (Titriplex® VI)* CAS No.: 67-42-5
 TSCA Inventory: listed
 LD50 orl rat : 3587 mg/kg

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.

6 mL Hardness Ca/Mg (R0)

Chemical: *boric acid* CAS No.: 10043-35-3
 PNEC (fresh water) : 2.9 mg/L
 PNEC = Predicted No Effect Concentration
 LC50 fish/96h : [4d] 79.7 mg/L
 EC50 daphnia/48h : 91-165 mg/L
 IC50 scenedesmus quadricauda/72h : [72h] 52.4 mg/L
 EC10 pseudomonas putida/16h : [EC10] 10 mg/L
 Water hazard class (DE): 1 WGK No.: 0315
 Dispersion coefficient (o/w) : -1,09
 Storage class (VCI): 6.1 D

Chemical: *sodium hydroxide* CAS No.: 1310-73-2
 LC50 leuciscus idus/96h : 35-189 mg/L
 LC50 fish/96h : 45.4 mg/L
 EC50 daphnia/48h : >100 mg/L
 Water hazard class (DE): 1 WGK No.: 142
 Storage class (VCI): 8 B

Chemical: *potassium chloride* CAS No.: 7447-40-7
 Water hazard class (DE): 1
 Storage class (VCI): 12-13

20x 100 mg NANOFIX Hardness Ca/Mg (R2)

Chemical: *Phthalein purple (phthalein complexon)* CAS No.: 2411-89-4
 Water hazard class (DE): 2

Chemical: *D-mannitol* CAS No.: 69-65-8
 Storage class (VCI): 11

Chemical: *polyvinylpyrrolidone* CAS No.: 9003-39-8
 Water hazard class (DE): 1
 Storage class (VCI): 10-11

5 mL Hardness Ca/Mg (R3)

Chemical: *ethylendioxybis(ethylennitrilo)-tetraacetic acid (Titriplex® VI)* CAS No.: 67-42-5
 Water hazard class (DE): 2
 Storage class (VCI): 12-13



Safety Data Sheet

according to Regulations REACH 1907/2006/EC

REF: 985044

NANOCOLOR Hardness Ca/Mg

Page: 10/13

Printing date: 27.09.2023

Date of issue: 26.01.2023

Version: 2.2.2.5

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). Close container tightly.

13.1 Waste treatment methods

Not necessary, see above.

SECTION 14: Transport information

14.1 - 14.4 Not necessary

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

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
 BekGS 408, Application of the GefStoffV and the TRGS with the entry into force of the CLP regulation, December 2009, status: Jan 2012
 Wasserhaushaltsgesetz - WHG, Section 3 Handling substances hazardous to water, Jul 2009, status: Aug 2016
 MN leaflet/instructions for use, also at www.mn-net.com
 If necessary, observe other country-specific regulations.

15.2 Chemical safety assessment

not necessary for these small amounts



MACHEREY-NAGEL GmbH & Co. KG
 Valencienner Str. 11
 52355 Düren · Germany
www.mn-net.com

DE Tel.: +49 24 21 969-0 info@mn-net.com
 CH Tel.: +41 62 388 55 00 sales-ch@mn-net.com
 FR Tel.: +33 388 68 22 68 sales-fr@mn-net.com
 US Tel.: +1 888 321 62 24 sales-us@mn-net.com

Safety Data Sheet

according to Regulations REACH 1907/2006/EC

REF: 985044

NANOCOLOR Hardness Ca/Mg

Page: 11/13

Printing date: 27.09.2023

Date of issue: 26.01.2023

Version: 2.2.2.5

SECTION 16: Other information

16.1 Changes compared to the last version

Between versions 2.2.2.5 and 2.2.2.2 following changes were applied: - 3 substance data corrected

16.2 List of H and P phrases

16.2.1 List of relevant H phrases

H315 Causes skin irritation.
 H319 Causes serious eye irritation.
 H360FD May damage fertility. May damage the unborn child.

16.2.2 List of relevant P phrases

P201 Obtain special instructions before use.
 P202 Do not handle until all safety precautions have been read and understood.
 P280sh Wear protective gloves/eye protection.
 P308+313 IF exposed or concerned: Get medical advice/attention.
 P405 Store locked up.
 P501 Dispose of contents/container to regulated waste treatment.

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 hazardous materials, 2021

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 risk of 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 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)

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

Regulation 669/2018/EU, adaptation of Regulation 1272/2008/EC to technical and scientific progress (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

2017-11 adjustment according the ECHA registration dossier

2022-11 adjustment according Regulation 878/2020/EU

16.5 Further information

MACHEREY-NAGEL GmbH & Co. KG provides the information contained herein in good faith being up-to-date of own realizations at revision time. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgement in determining its appropriateness for a particular purpose.

MACHEREY-NAGEL GmbH & Co. KG makes NO REPRESENTATIONS or WARRANTIES, either expressed or implied, including without limitation any warranties of merchantability, fitness for a particular purpose with respect to the information set forth herein or the 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.



MACHEREY-NAGEL GmbH & Co. KG
 Valenciennes Str. 11
 52355 Düren · Germany
www.mn-net.com

DE Tel.: +49 24 21 969-0 info@mn-net.com
 CH Tel.: +41 62 388 55 00 sales-ch@mn-net.com
 FR Tel.: +33 388 68 22 68 sales-fr@mn-net.com
 US Tel.: +1 888 321 62 24 sales-us@mn-net.com

Safety Data Sheet

according to Regulations REACH 1907/2006/EC

REF: 985044

NANOCOLOR Hardness Ca/Mg

Page: 12/13

Printing date: 27.09.2023

Date of issue: 26.01.2023

Version: 2.2.2.5

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:	lethal concentration 50%
LD50:	lethal dose 50%
leuciscus idus:	fisch, ide, orfe
MAK:	maximum workplace concentration
Met:	Metall
mus:	mouse
Muta:	mutagen
NIOSH:	National Institute for Occupational Safety and Health (US)
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



Safety Data Sheet

according to Regulations REACH 1907/2006/EC

REF: 985044

NANOCOLOR Hardness Ca/Mg

Page: 13/13

Printing date: 27.09.2023

Date of issue: 26.01.2023

Version: 2.2.2.5

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.



MACHEREY-NAGEL GmbH & Co. KG
 Valencienner Str. 11
 52355 Düren · Germany
www.mn-net.com

DE Tel.: +49 24 21 969-0 info@mn-net.com
 CH Tel.: +41 62 388 55 00 sales-ch@mn-net.com
 FR Tel.: +33 388 68 22 68 sales-fr@mn-net.com
 US Tel.: +1 888 321 62 24 sales-us@mn-net.com