

Safety Data Sheet

according to Regulations REACH 1907/2006/EC

REF: 985044
Printing date: 03.08.2026

NANOCOLOR Hardness Ca/Mg
Date of issue: 16.10.2024

Page: 1/13
Version: 2.2.2.6

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
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



GHS07 GHS08

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)



GHS07 GHS08

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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)



GHS07



GHS08

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



GHS07



GHS08

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.

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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:	<i>boric acid</i>		
CAS No.:	10043-35-3		
Substance rating:	H360FD, Repr. 1 B		
Formula:	H ₃ BO 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	Indice No.:	005-007-00-2
Concentration:	0,5 - <5,5 %		
acc. CLP (GHS):	H360FD, Repr. 1 B		

Substance name:	<i>sodium hydroxide (solid)</i>		
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	Indice No.:	011-002-00-6
Concentration:	0,5 - <1 %		
acc. CLP (GHS):	H315, Skin Irrit. 2, H319, Eye Irrit. 2		

Substance name:	<i>potassium chloride</i>		
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)



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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.

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(ethylenitrilo)-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. ---

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- 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**

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**
no data available

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**
no data available

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 from MACHEREY-NAGEL. 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.

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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

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(ethylenitrilo)-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

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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
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 (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

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 (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

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 (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



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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

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: *boric acid*

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 PDSC: 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 PDSC: 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

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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: *Phthalein purple (phthalein complexon)* 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
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: *ethylenedioxybis(ethylenitrilo)-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)

Substance name: *boric acid* CAS-Nr.: 10043-35-3
PNEC (fresh water) : 2.9 mg/L
PNEC = Predicted No Effect Concentration = concentration at which no effect on the environment is expected
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
Storage class (VCI): 6.1 D

Substance name: *sodium hydroxide* CAS-Nr.: 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

Substance name: *potassium chloride* CAS-Nr.: 7447-40-7
Water hazard class (DE): 1
Storage class (VCI): 12-13



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

Substance name: *Phthalein purple (phthalein complexon)*

CAS-Nr.: 2411-89-4

Water hazard class (DE): 2

Substance name: *D-mannitol*

CAS-Nr.: 69-65-8

Storage class (VCI): 11

Substance name: *polyvinylpyrrolidone*

CAS-Nr.: 9003-39-8

Water hazard class (DE): 1

Storage class (VCI): 10-11

5 mL Hardness Ca/Mg (R3)

Substance name: *ethylenedioxybis(ethylenitrilo)-tetraacetic acid (Titriplex® VI)*

CAS-Nr.: 67-42-5

Water hazard class (DE): 2

Storage class (VCI): 12-13

12.2 Persistence and degradability

12.3 Bioaccumulative potential

6 mL Hardness Ca/Mg (R0)

Substance name: *boric acid*

CAS-Nr.: 10043-35-3

Dispersion coefficient ($K_{o/w}$): -1,09

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). 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.

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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

no data available

SECTION 16: Other information

16.1 Changes compared to the last version

Between versions 2.2.2.6 and 2.2.2.2 following changes were applied: - 4 substance data corrected

16.2 List of H and P phrases

16.2.1 List of relevant H phrases

H Between versions 2.2.2.6 and 2.2.2.2 following changes were applied: - 4 substance data corrected
 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 workSUVA .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 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



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Safety Data Sheet

according to Regulations REACH 1907/2006/EC

REF: 985044	NANOCOLOR Hardness Ca/Mg	Page: 12/13
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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

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16.6 Legend / Abbreviations

acc:	according
ADR:	Convention concerning the International Carriage of Dangerous Goods by Road
Act:	acute
BAT:	biological workplace tolerance value
CAO:	Cargo Aircraft Only
Carc:	carcinogen
CAS:	Chemical Abstracts Service
CLP:	Classification, Labelling and Packaging regulation
CMR:	carcinogen, mutagen, reproduction toxic
Corr:	corrosive
COD:	chemical oxygen demand
CSCL:	Chemical Substance Control Law (Jp)
Dam:	damage
DNEL:	Derived No-Effect Level (for workers)
derm:	dermal
dog:	dog
EC10:	Concentration causing a toxic effect in 10% of the test organisms
EC:	European Community
EC-Nr:	Substance number of the EC substance inventory
EmS:	Guide to accident management measures on ships
EU:	European Union
fish:	fish (not specified)
GHS:	Global Harmonized System of Classification and Labeling of Chemicals
gpg:	guinea pig
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
ori:	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



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rat: rat
rbt: rabbit
RD: rapidly degradable
RE: repeated
RECh: 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

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.