

Safety Data Sheet

according to Regulations REACH 1907/2006/EC

REF: 985009	NANOCOLOR Lead 5	Page: 1/14
Printing date: 27.09.2023	Date of issue: 28.10.2022	Version: 2.2.4.2

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

1.1 Product identifier

REF 985009
 Product name NANOCOLOR Lead 5

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 0.5 mL Lead 5 (R0) UFI: WWMU-S3DQ-920Y-12HN
 1 x 5 mL Lead 5 (R2) UFI: KNQU-Y3GE-320T-605Q
 1 x 20x 11 mg NANOFIX Lead 5 (R3) UFI: SPGU-Y3K8-920Q-MAYG

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



GHS05 GHS06 GHS07 GHS08 GHS09

Signal word	DANGER
Hazard identification	Hazard classes/categories
H290	Met. Corr. 1
H301	Acute Tox. 3 oral
H311	Acute Tox. 3 derm.
H317	Skin Sens. 1
H331	Acute Tox. 3 inh.
H351	Carc. 2
H411	Aquatic Chronic 2
EUH032	not defined

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

20x 11 mg NANOFIX Lead 5 (R3)



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: 985009	NANOCOLOR Lead 5	Page: 2/14
Printing date: 27.09.2023	Date of issue: 28.10.2022	Version: 2.2.4.2



GHS09

Signal word NONE

Hazard identification	Hazard classes/categories
H411	Aquatic Chronic 2

0.5 mL Lead 5 (R0)



GHS06



GHS09

Signal word DANGER

Hazard identification	Hazard classes/categories
EUH032	not defined
H301	Acute Tox. 3 oral
H311	Acute Tox. 3 derm.
H331	Acute Tox. 3 inh.
H411	Aquatic Chronic 2

5 mL Lead 5 (R2)



GHS05



GHS07



GHS08

Signal word DANGER

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

20x 11 mg NANOFIX Lead 5 (R3)



GHS09

Signal word: NONE

0.5 mL Lead 5 (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: 985009

NANOCOLOR Lead 5

Page: 3/14

Printing date: 27.09.2023

Date of issue: 28.10.2022

Version: 2.2.4.2



GHS06



GHS09

Signal word: DANGER

H301, H311, H331

Toxic if swallowed. Toxic in contact with skin. Toxic if inhaled.

P260, P264, P270, P271, P280, P301+310, P302+352, P330, P361+364, P405, P501

Do not breathe dust/fume/gas/mist/vapours/spray. Wash hands thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection. IF SWALLOWED: Immediately call a POISON CENTER/ doctor. IF ON SKIN: Wash with plenty of water. Rinse mouth. Take off immediately all contaminated clothing and wash it before reuse. Store locked up. Dispose of contents/container to regulated waste treatment.

5 mL Lead 5 (R2)



GHS05



GHS08

Signal word: DANGER

H317, H351

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

P201, P202, P261sh, P280sh, P302+352, P308+313, P333+313, P362+364, P405, P501

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid breathing dust/vapours. Wear protective gloves/eye protection. IF ON SKIN: Wash with plenty of water. IF exposed or concerned: Get medical advice/attention. If skin irritation or rash occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse. Store locked up. Dispose of contents/container to regulated waste treatment.

Label elements of the complete product



GHS05



GHS06



GHS08



GHS09

Signal word: DANGER

H301, H311, H317, H331, H351

Toxic if swallowed. Toxic in contact with skin. May cause an allergic skin reaction. Toxic if inhaled. Suspected of causing cancer.

P201, P202, P260, P264, P270, P271, P280sh, P301+310, P302+352, P330, P333+313, P361+364, P405, P501

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe dust/fume/gas/mist/vapours/spray. Wash hands thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Wear protective gloves/eye protection. IF SWALLOWED: Immediately call a POISON CENTER/ doctor. IF ON SKIN: Wash with plenty of water. Rinse mouth. If skin irritation or rash occurs: Get medical advice/attention. Take off immediately all contaminated clothing and wash it before reuse. Store locked up. Dispose of contents/container to regulated waste treatment.

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.

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. Cause severe after oral intake, inhalation of vapours, skin contact, impairments of health or can lead to death even when only ingested in small quantities. 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. Suspected of causing cancer.

Information pertaining to particular risks to the environment



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: 985009

NANOCOLOR Lead 5

Page: 4/14

Printing date: 27.09.2023

Date of issue: 28.10.2022

Version: 2.2.4.2

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

0.5 mL Lead 5 (R0)

Substance name: *potassium cyanide*
CAS No.: 151-50-8

Substance rating: H300, Acute Tox. 1 oral, H310, Acute Tox. 1 derm., H330, Acute Tox. 1 inh., H410, Aquatic Chronic 1, EUH032, not defined

Formula: KCN

Pseudonym (de): Cyankali

REACH Reg. No.: 01-2119486407-29-xxxx

EC No.: 205-792-3

Indice No.: 006-007-00-5

Concentration: 1 - <7 %

Correlation factor: x 0.40 (= %CN⁻)

The classification refers to the weight percentage of the metal (according to CLP regulation 2008/1272/EG Annex VI, 1.1.3.2 Note 1)

acc. CLP (GHS): H301, Acute Tox. 3 oral, H311, Acute Tox. 3 derm., H331, Acute Tox. 3 inh., H411, Aquatic Chronic 2, EUH032, not defined

Substance name: *dimethyl sulfoxide*
CAS No.: 67-68-5

Substance rating: No criteria for classification or naming of chemical not required.

Formula: C₂H₆OS

Pseudonym (de): DMSO

REACH Reg. No.: 01-2119431362-50-xxxx

EC No.: 200-664-3

Concentration: 40 - <60 %

acc. CLP (GHS): The criteria for classification are not fulfilled.

20x 11 mg NANOFIX Lead 5 (R3)

Substance name: *sodium diethyldithiocarbamate*
CAS No.: 148-18-5

Substance rating: H302, Acute Tox. 4 oral, H400, Aquatic Acute 1

Formula: C₅H₁₀NNaS₂

REACH Reg. No.: 01-2119513340-57-xxxx

EC No.: 205-710-6

Concentration: 2,5 - <25 %

acc. CLP (GHS): H411, Aquatic Chronic 2

5 mL Lead 5 (R2)

Substance name: *acetate buffer solution*
CAS No.: -

Substance rating: No criteria for classification or naming of chemical not required.

Formula: CH₃COOH/K/Na•H₂O

Concentration: 5 - <15 %

acc. CLP (GHS): The criteria for classification are not fulfilled.



Safety Data Sheet

according to Regulations REACH 1907/2006/EC

REF: 985009

NANOCOLOR Lead 5

Page: 5/14

Printing date: 27.09.2023

Date of issue: 28.10.2022

Version: 2.2.4.2

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

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. Take to a doctor, in a raised position if there are breathing difficulties.

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 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. If vomiting and if insensible place patient in recovery position and keep airways free. Administer a Dexamethasone spray as soon as possible. Ensure quiet, warmth, and provide resuscitation if necessary. In the event of respiratory distress ensure that the patient inhales oxygen. Secure the breathing, heart and circulatory function. ---

4.1.4 After ORAL Intake

After oral intake lots of water with activated charcoal supplement should be drunk after it has been ingested.

4.2 Most important symptoms and effects, both acute and delayed

Chronic effects: Repeated contact, even in small amounts, can lead to sensitization.

CMR Effekte: Suspected of causing cancer.

4.3 Indication of any immediate medical attention and special treatment needed

After SKIN CONTACT rinse with water for a long time. Apply glucocorticosteroides following inflammatory reactions. In the event of RESPIRATORY DISTRESS ensure that the patient inhales oxygen. TOXIFICATION: Treat symptomatically. Secure the breathing, heart and circulatory function. Remove the substance quickly from the body. Mechanically induce vomiting or ensure the patient eats medicinal charcoal compressed tablets or drinks aluminium oxide drug suspensions. In order to ensure rapid passage through the colon (administer 2 tablespoons of dissolved Glauber's salt). Alleviation of pain, if necessary sedation. Shock treatment. Administer a prophylaxis to counter pulmonary oedema.

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

Formation of hazardous and caustic vapour-air mixtures possible.



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: 985009	NANOCOLOR Lead 5	Page: 6/14
Printing date: 27.09.2023	Date of issue: 28.10.2022	Version: 2.2.4.2

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. 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. Use only in well-ventilated working areas. 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): 4.1A

Water hazard class (DE): 3

7.2.1 Requirements for stock rooms and containers

Keep original product packages tightly closed during handling and storage, and store in a well-ventilated place at max. 25 °C, away or preferably separate from substances with which a hazardous reaction could take place, so that they are not immediately accessible to outside parties. 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

0.5 mL Lead 5 (R0)

Chemical: *potassium cyanide*

CAS No.: 151-50-8

EU value: CN: [TWA] 1 / [STEL] 5 mg/m³

TRGS 900 (DE): [CN 8h] 1 / [15min] 5 mg/m³
E/e respirable

Short-term exposure factor: (4), H
skin resorptive (H), respiratory sensitizable (Sa), skin sensitizable (Sh), teratogenic (Z) not securely excluded / (Y) certainly excluded

SUVA(CH) MAK value: 5 CN e mg/m³

NIOSH: not listed

NIOSH STEL: skin, HCN 4.7 ppm / 5 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: EPCRA/SARA Section 302 Extremely Hazardous Substances Yes (TPQ = 100 lbs) n/a; TWA skin, HCN
10 ppm / 11 mg/m³



Safety Data Sheet

according to Regulations REACH 1907/2006/EC

REF: 985009	NANOCOLOR Lead 5	Page: 7/14
Printing date: 27.09.2023	Date of issue: 28.10.2022	Version: 2.2.4.2

Chemical: *dimethyl sulfoxide* CAS No.: 67-68-5
 DNEL: 394 inh mg/m³
DNEL = Derived No-Effect Level (for workers)
 PNEC (fresh water): 17 mg/L
PNEC = Predicted No Effect Concentration
 TRGS 900 (DE): 50 ppm / 160 mg/m³
E/e respirable
 Short-term exposure factor: 2 (I), H, Z
skin resorptive (H), respiratory sensitizable (Sa), skin sensitizable (Sh), teratogenic (Z) not securely excluded / (Y) certainly excluded
 SUVA(CH) MAK value: 50 ppm / 160 mg/m³

20x 11 mg NANOFIX Lead 5 (R3)
 Chemical: *sodium diethyldithiocarbamate* CAS No.: 148-18-5
 TRGS 900 (DE): 2 E mg/m³
E/e respirable
 Short-term exposure factor: 4
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

5 mL Lead 5 (R2)
 Chemical: *acetate buffer solution* CAS No.: -
 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

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**
Use for open access of these substances for example a protection filter, class A/AX. 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

0.5 mL Lead 5 (R0)
 a) State of aggregation: liquid
 b) Colour: yellow
 c) Odor: bitter almond
 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



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: 985009

NANOCOLOR Lead 5

Page: 8/14

Printing date: 27.09.2023

Date of issue: 28.10.2022

Version: 2.2.4.2

i) Flashing temperature:	no data available
j) Decomposition temperature:	no data available
k) pH value:	12-13
l) Kinematic viscosity:	no data available
m) Solubility in water:	0-100 %
n) Dispersion coefficient (o/w) :	no data available
o) Vapour pressure (20°C):	no data available
p) Specific gravity:	1,05 g/cm³
q) Relative vapour density (air=1) :	no data available
r) Particle size:	no data available

20x 11 mg NANOFIX Lead 5 (R3)

a) State of aggregation:	powder (solid)
b) Colour:	slightly yellow
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:	6-8
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 Lead 5 (R2)

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
k) pH value:	8-9
l) Kinematic viscosity:	no data available
m) Solubility in water:	0-100 %
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
 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: 985009	NANOCOLOR Lead 5	Page: 9/14
Printing date: 27.09.2023	Date of issue: 28.10.2022	Version: 2.2.4.2

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

Possible: &H:EUH031& 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.

0.5 mL Lead 5 (R0)

Chemical: *potassium cyanide* CAS No.: 151-50-8
 TSCA Inventory: listed California Proposition 65 List: not listed
 Target Organs: act on blood or hemato-poitetic system: decrease hemoglobin function; deprive body tissues of oxygen
 Symptoms: cyanosis; loss of consciousness
 Australia NICNAS: not listed Canada CEPA 1999: DSL Yes
 Japan CSCL/PRTR: Poisonous substance, PRTR: ≥1,0% CN class I, Japan PDSCL: Poisonous Substance
 Japan ISHL: listed ≥1,0%/≥1,0%, Article 57-1+2 (Labelling&SDS required)
 South Korea TCCA: not listed
 Korea Exist.Chem.Inventory: KE-29092, >1% Toxic 97-1-90
 LD50 orl rat : 5 mg/kg
 LC₅₀ orl hmn : 2,86 mg/kg
 LD50 orl mus : 8,5 mg/kg
 LD50 scu rat : 7,8 mg/kg
 Acute Effects: Cause severe after oral intake, inhalation of vapours, skin contact, impairments of health or can lead to death even when only ingested in small quantities.
 TRGS 905 (DE): R F C

Chemical: *dimethyl sulfoxide* CAS No.: 67-68-5
 TSCA Inventory: listed
 Korea Exist.Chem.Inventory: KE-32367
 LD50 orl rat : 14500 mg/kg

20x 11 mg NANOFIX Lead 5 (R3)

Chemical: *sodium diethyldithiocarbamate* CAS No.: 148-18-5
 TSCA Inventory: listed
 Japan CSCL/PRTR: PRTR: >1,0% class I
 LD50 orl rat : 1500 mg/kg
 TRGS 907 (DE): Sh

5 mL Lead 5 (R2)

Chemical: *acetate buffer solution* CAS No.: -
 TSCA Inventory: all listed
 Korea Exist.Chem.Inventory: listed



Safety Data Sheet

according to Regulations REACH 1907/2006/EC

REF: 985009	NANOCOLOR Lead 5	Page: 10/14
Printing date: 27.09.2023	Date of issue: 28.10.2022	Version: 2.2.4.2

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 _{ori 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

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.

0.5 mL Lead 5 (R0)

Chemical: *potassium cyanide* CAS No.: 151-50-8
 Toxic to aquatic life with long lasting effects. Avoid contact of substance/mixture to environment.
 Environmental hazards must not be labelled with H and P phrases until 125 mL (EU 1272/2008 Annex I - 1.5.2).
 LC50 _{daphnia magna/48h}: 2.48h; 0.53 24h mg/L
 LC50 _{fish/96h}: 0.45 mg/L
 EC50 _{daphnia/48h}: 0.041 mg/L
 IC50 _{scenedesmus quadricauda/72h}: 0.03 _{8d} mg/L
 EC10 _{pseudomonas putita/16h}: EC10/16h: 0.001 mg/L
 Water hazard class (DE): 3 WGK No.: 338
 Storage class (VCI): 6.1 B

Chemical: *dimethyl sulfoxide* CAS No.: 67-68-5
 PNEC (fresh water): 17 mg/L
 PNEC = Predicted No Effect Concentration
 LC50 _{fish/96h}: 38.5 g/L
 EC50 _{daphnia/48h}: 24.6 g/L
 EC10 _{pseudomonas putita/16h}: EC/16h: 7100 mg/L
 Water hazard class (DE): 1 WGK No.: 5050
 Dispersion coefficient (o/w): -1,35
 Storage class (VCI): 12

20x 11 mg NANOFIX Lead 5 (R3)

Chemical: *sodium diethyldithiocarbamate* CAS No.: 148-18-5
 Toxic to aquatic life with long lasting effects. Avoid contact of substance/mixture to environment.
 Environmental hazards must not be labelled with H and P phrases until 125 mL (EU 1272/2008 Annex I - 1.5.2).
 Water hazard class (DE): 2
 Storage class (VCI): 12-13

5 mL Lead 5 (R2)

Chemical: *acetate buffer solution* CAS No.: -
 Storage class (VCI): 12

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



Safety Data Sheet

according to Regulations REACH 1907/2006/EC

REF: 985009	NANOCOLOR Lead 5	Page: 11/14
Printing date: 27.09.2023	Date of issue: 28.10.2022	Version: 2.2.4.2

12.2 Persistence and degradability

not necessary

12.3 Bioaccumulative potential

not necessary

12.4 Mobility in soil

not necessary

12.5 Results of PBT and vPvB 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

Do not collect in acidic waste. May form toxic gases. 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. 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:**
class 6.1 II, **Excepted Quantities** ($\leq 1 \text{ mL} / \sum \leq 500 \text{ mL}$) = ADR/ IATA E4

14.1 UN number: 3413

14.2 UN proper shipping name: Potassium cyanide solution

14.3 Class: 6.1

14.4 Packing group: II

Road transport ADR

Classification code: T4 Tunnel restriction code: E
Limited Quantity: 100 mL
Excepted Quantity: E 4

Air transport IATA DGR

Limited Quantity: PAX: 654 max. quantity PAX: 5 L
CAO: 662 max. quantity CAO: 60 L
Excepted Quantity: E 4

Maritime transport IMDG

EmS: F-A, S-A Staukategorie: B
Maritime pollutant (5.2.1.6): P (Limited Quantity (LQ) until 5 L/kg per inner package)

14.5 Environmental hazards



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: 985009	NANOCOLOR Lead 5	Page: 12/14
Printing date: 27.09.2023	Date of issue: 28.10.2022	Version: 2.2.4.2

none, contains only small quantities of hazardous substances, contains only small amounts of these 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
 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

SECTION 16: Other information

16.1 Changes compared to the last version

Between versions 2.2.4.2 and 2.2.2.2 following changes were applied: - 2 composition data corrected

16.2 List of H and P phrases

16.2.1 List of relevant H phrases

H290	May be corrosive to metals.
H301	Toxic if swallowed.
H311	Toxic in contact with skin.
H317	May cause an allergic skin reaction.
H331	Toxic if inhaled.
H351	Suspected of causing cancer.
H411	Toxic to aquatic life with long lasting effects.
EUH032	Contact with acids liberates very toxic gas.

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.
P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P264	Wash hands thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P280sh	Wear protective gloves/eye protection.
P301+310	IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
P302+352	IF ON SKIN: Wash with plenty of water.
P330	Rinse mouth.
P333+313	If skin irritation or rash occurs: Get medical advice/attention.
P361+364	Take off immediately all contaminated clothing and wash it before reuse.
P405	Store locked up.
P501	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: 985009	NANOCOLOR Lead 5	Page: 13/14
Printing date: 27.09.2023	Date of issue: 28.10.2022	Version: 2.2.4.2

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
 TRGS 907, German technical rules for listing substances and causes of sensitization, updated November 2011 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 Text (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.

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



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: 985009	NANOCOLOR Lead 5	Page: 14/14
Printing date: 27.09.2023	Date of issue: 28.10.2022	Version: 2.2.4.2

- 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
- 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.



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