

Safety Data Sheet

according to Regulations REACH 1907/2006/EC

REF: 918101

NANOCOLOR Lead, without CCl₄

Page: 1/18

Printing date: 03.08.2026

Date of issue: 16.06.2026

Version: 2.2.7.2

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

1.1 Product identifier

REF 918101
Product name NANOCOLOR Lead, without CCl₄

REACH Registration number(s): see SECTION 3.1/3.2 or
A registration number for the substance(s) does not exist because the annual tonnage does not require registration or the substance or its use is excluded from registration.

1 x 15 mL Lead (R1) UFI: 8X9U-23AN-S20J-AFX5
1 x 20 g Lead (R4) UFI: KSXT-83M1-Y207-A35S
1 x 10 g Lead (R5)
2 x 75 mL Lead (R2) UFI: GMXT-8378-C207-0E0N
3 x 100 mL Lead (R3) UFI: 1PXT-R3WN-N20Q-NRKQ
1 x 5 g wadding

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
Valenciennener Str. 11, 52355 Düren, Germany
Phone: +49 2421 969 0

E-mail: sds@mn-net.com (msds@mn-net.com)

1.4 Emergency telephone number

Outside Germany (DE): Call your regional Poisons Information Service or call local Life Saving Service.

DE: Gemeinsames Giftinformationszentrum (GGIZ)

99089 Erfurt tel. +49 361 730 730, <<https://www.ggiz-erfurt.de>>

You find our current versions of SDS in Internet:

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

SECTION 2: Hazard identification

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



GHS02 GHS05 GHS06 GHS07 GHS08 GHS09

Signal word

DANGER

Hazard identification

Hazard classes/categories

H225 Flam. Liq. 2
H290 Met. Corr. 1
H300 Acute Tox. 2 oral
H310 Acute Tox. 2 derm.
H315 Skin Irrit. 2
H317 Skin Sens. 1
H319 Eye Irrit. 2
H330 Acute Tox. 2 inh.
H351 Carc. 2
H373 STOT RE 2
H410 Aquatic Chronic 1
EUH032 not defined

Safety Data Sheet

according to Regulations REACH 1907/2006/EC

REF: 918101

NANOCOLOR Lead, without CCl₄

Page: 2/18

Printing date: 03.08.2026

Date of issue: 16.06.2026

Version: 2.2.7.2

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

75 mL Lead (R2)



GHS07

Signal word

WARNING

Hazard identification

Hazard classes/categories

H315

Skin Irrit. 2

H319

Eye Irrit. 2

100 mL Lead (R3)



GHS06



GHS09

Signal word

DANGER

Hazard identification

Hazard classes/categories

EUH032

not defined

H300

Acute Tox. 2 oral

H310

Acute Tox. 2 derm.

H330

Acute Tox. 2 inh.

H410

Aquatic Chronic 1

20 g Lead (R4)



GHS05



GHS07



GHS08



GHS09

Signal word

DANGER

Hazard identification

Hazard classes/categories

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

10 g Lead (R5)

Signal word

Do not need labelling as hazardous

-

No hazard class

15 mL Lead (R1)

Safety Data Sheet

according to Regulations REACH 1907/2006/EC

REF: 918101

NANOCOLOR Lead, without CCI4

Page: 3/18

Printing date: 03.08.2026

Date of issue: 16.06.2026

Version: 2.2.7.2



GHS02

Signal word

DANGER

Hazard identification

Hazard classes/categories

H225

Flam. Liq. 2

5 g wadding

Signal word

Do not need labelling as hazardous

No hazard class

List of H phrases: see section 16.2

2.2 Label elements according regulation (EC) 1272/2008

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

75 mL Lead (R2)



GHS07

Signal word: WARNING

100 mL Lead (R3)



GHS06



GHS09

Signal word: DANGER

H300, H310, H330, EUH032

Fatal if swallowed. Fatal in contact with skin. Fatal if inhaled. Contact with acids liberates very toxic gas.

P260sh, P262, P264, P270, P271, P280, P284, P301+310, P302+352, P330, P361+364, P405, P501

Do not breathe dust/vapours. Do not get in eyes, on skin, or on clothing. 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/clothing/eye/face protection. [In case of inadequate ventilation] wear respiratory 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.

20 g Lead (R4)



GHS05



GHS08



GHS09

Signal word: DANGER

H317, H351

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

Safety Data Sheet

according to Regulations REACH 1907/2006/EC

REF: 918101

NANOCOLOR Lead, without CCl₄

Page: 4/18

Printing date: 03.08.2026

Date of issue: 16.06.2026

Version: 2.2.7.2

P201, P202, P261sh, P272, 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. Contaminated work clothing should not be allowed out of the workplace. 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.

10 g Lead (R5)

Do not need labelling as hazardous
Signal word: -

15 mL Lead (R1)



GHS02

Signal word: DANGER

5 g wadding

Do not need labelling as hazardous
Signal word: -

Label elements of the complete product



GHS02



GHS05



GHS06



GHS08



GHS09

Signal word: DANGER

H300, H310, H317, H330, H351, EUH032

Fatal if swallowed. Fatal in contact with skin. May cause an allergic skin reaction. Fatal if inhaled. Suspected of causing cancer. Contact with acids liberates very toxic gas.

P201, P202, P260sh, P262, P264, P270, P271, P272, P280sh, P284, 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/vapours. Do not get in eyes, on skin, or on clothing. Wash hands thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Contaminated work clothing should not be allowed out of the workplace. Wear protective gloves/eye protection. [In case of inadequate ventilation] wear respiratory 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. In the case of pH values are less than 5 or higher than 9 then it is irritant. Flammable properties.

Information pertaining to particular risks to human and possible symptoms

Causes varying degrees of acid burns on the skin, to the eyes and to the mucous membranes and wounds which do not heal quickly depending on the concentration, temperature and the exposure time. 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

Should not be released into the environment.

PBT: not applicable

vPvB: not applicable

Possible endocrine disrupting effects

no data available

Safety Data Sheet

according to Regulations REACH 1907/2006/EC

REF: 918101

NANOCOLOR Lead, without CCl₄

Page: 5/18

Printing date: 03.08.2026

Date of issue: 16.06.2026

Version: 2.2.7.2

SECTION 3: Composition / information on ingredients

3.1 Substances or 3.2 Mixtures

75 mL Lead (R2)

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

Substance rating: H314, Skin Corr. 1 B, H335, resp. irrit. STOT SE 3, H400, Aquatic Acute 1
Formula: $\text{NH}_3 \cdot \text{H}_2\text{O}$
Pseudonym (de): Salmiakgeist
REACH Reg. No.: 01-2119488876-14-xxxx, 01-2119982985-14-XXXX
EC No.: 215-647-6 Indice No.: 007-001-01-2
Concentration: 1 - <5 %
acc. CLP (GHS): H315, Skin Irrit. 2, H319, Eye Irrit. 2

100 mL Lead (R3)

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: 7 - <15 % 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): H300, Acute Tox. 2 oral, H310, Acute Tox. 2 derm., H330, Acute Tox. 2 inh., H410, Aquatic Chronic 1, EUH032, not defined

20 g Lead (R4)

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: 80 - <100 %
acc. CLP (GHS): 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

10 g Lead (R5)

Substance name: *Dithizone (metal indicator)*
CAS No.: 60-10-6

Substance rating: H315, Skin Irrit. 2, H319, Eye Irrit. 2
Formula: $\text{C}_{13}\text{H}_{12}\text{N}_4\text{S}$
Pseudonym (de): 1,5-Diphenylthiocarbazon
EC No.: 200-454-1
Concentration: 0,1 - <1 %
acc. CLP (GHS): The criteria for classification are not fulfilled.

Safety Data Sheet

according to Regulations REACH 1907/2006/EC

REF: 918101

NANOCOLOR Lead, without CCl₄

Page: 6/18

Printing date: 03.08.2026

Date of issue: 16.06.2026

Version: 2.2.7.2

Substance name: *sodium chloride*
CAS No.: 7647-14-5
Substance rating: No criteria for classification or naming of chemical not required.
Formula: NaCl
Pseudonym (de): Kochsalz
REACH Reg. No.: exempt, Annex V
EC No.: 231-598-3
Concentration: 50 - <80 %
acc. CLP (GHS): The criteria for classification are not fulfilled.

15 mL Lead (R1)

Substance name: *ethanol*
CAS No.: 64-17-5
(denatured with 1% 2-butanone / 1% 2-propanol)
Substance rating: H225, Flam. Liq. 2
Formula: C₂H₆O; C₂H₅OH
Pseudonym (de): Äthylalkohol, vergällter Spiritus
REACH Reg. No.: 01-2119457610-43-xxxx
EC No.: 200-578-6
Concentration: 75 - <90 %
acc. CLP (GHS): H225, Flam. Liq. 2
Indice No.: 603-002-00-5

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

5 g wadding

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.

Safety Data Sheet

according to Regulations REACH 1907/2006/EC

REF: 918101

NANOCOLOR Lead, without CCl4

Page: 7/18

Printing date: 03.08.2026

Date of issue: 16.06.2026

Version: 2.2.7.2

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

DANGER: Highly flammable (GHS regulation). Forms explosive vapour-air mixtures. Formation of hazardous and caustic vapour-air mixtures possible.

5.3 Advice for firefighters

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

Should not be released into the 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.

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): 3

Water hazard class (DE): 3

7.2.1 Requirements for stock rooms and containers

Keep original product packages tightly closed during handling and storage, 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.

Safety Data Sheet

according to Regulations REACH 1907/2006/EC

REF: 918101

NANOCOLOR Lead, without CCl₄

Page: 8/18

Printing date: 03.08.2026

Date of issue: 16.06.2026

Version: 2.2.7.2

7.3 Specific end use(s)

Product for analytical use.

SECTION 8: Exposure controls /personal protection

8.1 Control parameters

20 g Lead (R4)

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

15 mL Lead (R1)

Chemical: *ethanol*

CAS No.: 64-17-5

DNEL: [derm] 343 mg/kg; [inh] 950 mg/m³
DNEL = Derived No-Effect Level (for workers)

PNEC (fresh water): 0.96 mg/L
PNEC = Predicted No Effect Concentration

TRGS 900 (DE): 200 mL/m³ / 380 mg/m³
E/e respirable

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

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

NIOSH: [TWA] 1000 ppm / 1900 mg/m³

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

OSHA: [TWA] 1000 ppm / 1900 mg/m³

Chemical: *indicator dye(s)*

CAS No.: -

75 mL Lead (R2)

Chemical: *ammonia solution*

CAS No.: 1336-21-6

DNEL: [inh] 14 mg/m³
DNEL = Derived No-Effect Level (for workers)

PNEC (fresh water): 0.0011 mg/L
PNEC = Predicted No Effect Concentration

EU value: 20 ppm / 14 mg/m³
TRGS 900 (DE): 20 ppm / 14 mg/m³
E/e respirable

Short-term exposure factor: 2 (I), Y
skin resorptive (H), respiratory sensitizable (Sa), skin sensitizable (Sh), teratogenic (Z) not securely excluded / (Y) certainly excluded

SUVA(CH) MAK value: 20 ppm / 14 mg/m³

NIOSH: [TWA] 25 ppm / 18 mg/m³

NIOSH STEL: 35 ppm / 27 mg/m³

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

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

100 mL Lead (R3)

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

10 g Lead (R5)



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Safety Data Sheet

according to Regulations REACH 1907/2006/EC

REF: 918101

NANOCOLOR Lead, without CCl₄

Page: 9/18

Printing date: 03.08.2026

Date of issue: 16.06.2026

Version: 2.2.7.2

Chemical: *sodium chloride*

CAS No.: 7647-14-5

Chemical: *Dithizone (metal indicator)*

CAS No.: 60-10-6

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

20 g Lead (R4)

a) State of aggregation:	solid
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:	4-5
l) Kinematic viscosity:	no data available
m) Solubility in water:	0-45 %
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

15 mL Lead (R1)

a) State of aggregation:	liquid
b) Colour:	colourless
c) Odor:	alcoholic
d) Melting point:	no data available
e) Boiling point:	no data available
f) Flammability:	no data available
g) Explosive limits (lower / upper):	no data available
h) Flash point:	18 °C
i) Flashing temperature:	no data available
j) Decomposition temperature:	no data available
k) pH value:	2-3
l) Kinematic viscosity:	no data available
m) Solubility in water:	0-100 %

Safety Data Sheet

according to Regulations REACH 1907/2006/EC

REF: 918101

NANOCOLOR Lead, without CCl₄

Page: 10/18

Printing date: 03.08.2026

Date of issue: 16.06.2026

Version: 2.2.7.2

n) Dispersion coefficient ($K_{o/w}$):	no data available
o) Vapour pressure (20°C):	no data available
p) Specific gravity:	0,91 g/cm ³
q) Relative vapour density ($\rho_{air=1}$):	no data available
r) Particle size:	no data available

75 mL Lead (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:	9-10
l) Kinematic viscosity:	no data available
m) Solubility in water:	0-100 %
n) Dispersion coefficient ($K_{o/w}$):	no data available
o) Vapour pressure (20°C):	no data available
p) Specific gravity:	0,99 g/cm ³
q) Relative vapour density ($\rho_{air=1}$):	no data available
r) Particle size:	no data available

100 mL Lead (R3)

a) State of aggregation:	liquid
b) Colour:	colourless
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
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 ($K_{o/w}$):	no data available
o) Vapour pressure (20°C):	no data available
p) Specific gravity:	no data available
q) Relative vapour density ($\rho_{air=1}$):	no data available
r) Particle size:	no data available

10 g Lead (R5)

a) State of aggregation:	powder (solid)
b) Colour:	green
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 ($K_{o/w}$):	no data available
o) Vapour pressure (20°C):	no data available
p) Specific gravity:	no data available
q) Relative vapour density ($\rho_{air=1}$):	no data available



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Safety Data Sheet

according to Regulations REACH 1907/2006/EC

REF: 918101

NANOCOLOR Lead, without CCl4

Page: 11/18

Printing date: 03.08.2026

Date of issue: 16.06.2026

Version: 2.2.7.2

r) Particle size:

no data available

9.2 Other information

9.2.1 Information on physical hazard classes

no data available

9.2.2 Other safety-related parameters

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

□□

Substances are highly volatile and form flammable gas-air mixtures.

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

Avoid contact with strong acids or alkalines.

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.

20 g Lead (R4)

Chemical: *hydroxylammonium chloride* CAS No.: 5470-11-1

TSCA Inventory: listed California Proposition 65 List: not listed

Exposure Routes: -

Symptoms: -

Australia NICNAS: not listed Canada CEPA 1999: DSL Yes

Japan CSCL/PRTR: not listed, Japan PDSCL: Deleterious Substance

Japan ISHL: not listed

South Korea TCCA: not listed

Korea Exist.Chem.Inventory: KE-20602, >1% Toxic 97-1-411

LD50 orl rat : 141 mg/kg

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

Chronic Effects: May cause sensitization by skin contact, also in repeated contact of small amounts. May cause damage to organs through prolonged or repeated exposure.

Carcinogenic Effects: Suspected of causing cancer.

TRGS 907 (DE): Sh

15 mL Lead (R1)

Chemical: *ethanol* CAS No.: 64-17-5

TSCA Inventory: listed California Proposition 65 List: not listed

ACGIH: 1000 ppm

Exposure Routes: inhalation, ingestion, skin and/or eye contact

Target Organs: Eyes, skin, respiratory system, central nervous system, liver, blood, reproductive system

Symptoms: irritation eyes, skin, nose; headache, drowsiness, lassitude (weakness, exhaustion), narcosis; cough;

liver damage; anemia; reproductive, teratogenic



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Safety Data Sheet

according to Regulations REACH 1907/2006/EC

REF: 918101

NANOCOLOR Lead, without CCl₄

Page: 12/18

Printing date: 03.08.2026

Date of issue: 16.06.2026

Version: 2.2.7.2

Australia NICNAS: not listed Canada CEPA 1999: DSL yes
 Japan CSCL/PRTR: not listed, Japan PDSCL: not listed
 Japan ISHL: listed $\geq 0,1\%$ / $\geq 0,1\%$, Article 57-2 (SDS required)
 South Korea TCCA: not listed
 Korea Exist.Chem.Inventory: KE-13217
 LD50 orl rat : 6200 mg/kg
 LC_{Low} ihl gpg : 21,900 mg/L
 LC_{Low} orl hmn : 1400 mg/kg
 LC50 ihl mus : 123,4 mg/L/4H
 LC50 ihl rat : 115,9-133,8 mg/L/4H
 LD50 orl mus : 3450 mg/kg

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

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

CAS No.: -

75 mL Lead (R2)

Chemical: *ammonia solution* CAS No.: 1336-21-6
 TSCA Inventory: listed California Proposition 65 List: not listed
 Exposure Routes: inhalation, ingestion (solution), skin and/or eye contact (solution/liquid)
 Target Organs: Eyes, skin, respiratory system
 Symptoms: irritation eyes, nose, throat; dyspnea (breathing difficulty), wheezing, chest pain; pulmonary edema;
 pink frothy sputum; skin burns, vesiculation; I
 Australia NICNAS: not listed Canada CEPA 1999: DSL yes, Toxic Substances (Schedule 1) Yes
 (Item 53.)
 Japan CSCL/PRTR: not listed, Japan PDSCL: Deleterious Substance
 Japan ISHL: listed $\geq 0,2\%$ / $\geq 0,1\%$, Article 57-2 (SDS required)
 South Korea TCCA: not listed
 Korea Exist.Chem.Inventory: KE-01688, >10% Toxic 97-1-184
 LD50 orl rat : 350 mg/kg
 LC_{Low} ihl hmn : 5,000 mg/L
 LC50 ihl rat : 2000 ppm/4H

100 mL Lead (R3)

Chemical: *potassium cyanide* CAS No.: 151-50-8
 TSCA Inventory: listed California Proposition 65 List: not listed
 Target Organs: act on blood or hemato-poietic 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: $\geq 1,0\%$ CN class I, Japan PDSCL: Poisonous Substance
 Japan ISHL: listed $\geq 1,0\%$ / $\geq 1,0\%$, 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
 LC_{Low} 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

10 g Lead (R5)

Chemical: *sodium chloride* CAS No.: 7647-14-5
 TSCA Inventory: listed
 Korea Exist.Chem.Inventory: KE-31387
 LD50 orl rat : 3000 mg/kg

Chemical: *Dithizone (metal indicator)*
 TSCA Inventory: listed
 LD50 orl rat : > 500 mg/kg

CAS No.: 60-10-6



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Safety Data Sheet

according to Regulations REACH 1907/2006/EC

REF: 918101

Printing date: 03.08.2026

NANOCOLOR Lead, without CCl₄

Date of issue: 16.06.2026

Page: 13/18

Version: 2.2.7.2

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.

20 g Lead (R4)

Substance name: *hydroxylammonium chloride*

CAS-Nr.: 5470-11-1

Very toxic to aquatic life. Do not release into the environment.

Environmentally hazardous substances/mixtures up to 125 mL do not have to be labeled with H and P statements (EU 1272/2008 Annex I Paragraph 1.5.2).

LC50 *leuciscus idus*/96h : 1-10 mg/L

Water hazard class (DE): 3

Storage class (VCI): 4.1 A

15 mL Lead (R1)

Substance name: *ethanol*

CAS-Nr.: 64-17-5

PNEC (fresh water) : 0.96 mg/L

PNEC = Predicted No Effect Concentration = concentration at which no effect on the environment is expected

LC50 *daphnia magna*/48h : >100 mg/L

LC50 *pimephales promelas*/96h : 13400 - 15100 mg/L

LC50 *leuciscus idus*/96h : [48h] 8140 mg/L

LC50 *fish*/96h : 13 g/L

EC50 *daphnia*/48h : 9.3-14.2 g/L

IC50 *scenedesmus quadricauda*/72h : [7d] 5000 mg/L

EC10 *pseudomonas putida*/16h : [EC5] 6500 mg/L

Water hazard class (DE): 1 WGK No.: 0096

Storage class (VCI): 3

Substance name: *indicator dye(s)*

CAS-Nr.: -

Storage class (VCI): 12-13

75 mL Lead (R2)

Substance name: *ammonia solution*

CAS-Nr.: 1336-21-6

PNEC (fresh water) : 0.0011 mg/L

PNEC = Predicted No Effect Concentration = concentration at which no effect on the environment is expected

LC50 *fish*/96h : 0.89 mg/L

EC50 *daphnia*/48h : 101 mg/L

Water hazard class (DE): 2 WGK No.: 0211

Storage class (VCI): 8 B

100 mL Lead (R3)

Substance name: *potassium cyanide*

CAS-Nr.: 151-50-8

Very toxic to aquatic life with long lasting effects. Do not release into the environment.

Environmentally hazardous substances/mixtures up to 125 mL do not have to be labeled with H and P statements (EU 1272/2008 Annex I Paragraph 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 putida*/16h : EC10/16h: 0.001 mg/L

Water hazard class (DE): 3 WGK No.: 338

Storage class (VCI): 6.1 B

10 g Lead (R5)

Substance name: *sodium chloride*

CAS-Nr.: 7647-14-5

Water hazard class (DE): 1

Storage class (VCI): 12-13

Safety Data Sheet

according to Regulations REACH 1907/2006/EC

REF: 918101	NANOCOLOR Lead, without CCl ₄	Page: 14/18
Printing date: 03.08.2026	Date of issue: 16.06.2026	Version: 2.2.7.2

Substance name: *Dithizone (metal indicator)*
Water hazard class (DE): 3

CAS-Nr.: 60-10-6

12.2 Persistence and degradability

12.3 Bioaccumulative potential

15 mL Lead (R1)

Substance name: *ethanol*
Dispersion coefficient (K_{ow}): -0,31

CAS-Nr.: 64-17-5

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

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

Normally it is possible to empty small amounts (diluted!) into drains.
Dispose of contents/container to regulated waste treatment.

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:**

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
Limited Quantity: 100 mL Tunnel restriction code: E
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



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Safety Data Sheet

according to Regulations REACH 1907/2006/EC

REF: 918101	NANOCOLOR Lead, without CCl ₄	Page: 15/18
Printing date: 03.08.2026	Date of issue: 16.06.2026	Version: 2.2.7.2

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

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

no data available

SECTION 16: Other information

16.1 Changes compared to the last version

Between versions 2.2.7.2 and 2.2.2.2 following changes were applied: - 5 composition data corrected

16.2 List of H and P phrases

16.2.1 List of relevant H phrases

H Between versions 2.2.7.2 and 2.2.2.2 following changes were applied: - 5 composition data corrected
 H225 Highly flammable liquid and vapour.
 H290 May be corrosive to metals.
 H300 Fatal if swallowed.
 H302 Harmful if swallowed.
 H310 Fatal in contact with skin.
 H312 Harmful in contact with skin.
 H315 Causes skin irritation.
 H317 May cause an allergic skin reaction.
 H319 Causes serious eye irritation.
 H330 Fatal if inhaled.
 H351 Suspected of causing cancer.
 H373 May cause damage to organs through prolonged or repeated exposure.
 H400 Very toxic to aquatic life.
 H410 Very 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.



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Safety Data Sheet

according to Regulations REACH 1907/2006/EC

REF: 918101

NANOCOLOR Lead, without CCl₄

Page: 16/18

Printing date: 03.08.2026

Date of issue: 16.06.2026

Version: 2.2.7.2

P202	Do not handle until all safety precautions have been read and understood.
P260sh	Do not breathe dust/vapours.
P262	Do not get in eyes, on skin, or on clothing.
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.
P272	Contaminated work clothing should not be allowed out of the workplace.
P280sh	Wear protective gloves/eye protection.
P284	[In case of inadequate ventilation] wear respiratory 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.

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

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 progressText (11th ATP)

Regulation 1480/2018/EU, adaptation of regulation 1272/2008/EG to technical and scientific progress (13th ATP)

Regulation 521/2019/EU, adaptation of regulation 1272/2008/EG to technical and scientific progress (12th ATP)

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

Regulation 217/2020/EU, adaptation of Annex VI, Part 3, of Regulation 1272/2008/EC to technical and scientific progress (14th ATP)

Regulation 878/2020/EU, adaptation of Annex II of the REACH regulation 1907/2006/EG

Regulation 1182/2020/EU, adaptation of Annex VI, Part 3, of Regulation 1272/2008/EC to technical and scientific progress (15th ATP)

Regulation 643/2021/EU, adaptation of Annex VI, Part 1, of Regulation 1272/2008/EC to technical and scientific progress (16th ATP)

Regulation 849/2021/EU, adaptation of Annex VI, Part 3, of Regulation 1272/2008/EC to technical and scientific progress (17th ATP)

Regulation 692/2022/EU, adaptation of Annex VI, Part 1, of Regulation 1272/2008/EC to technical and scientific progress (18th ATP)

revisions/updates

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

2014-04 adjustment according Regulation 487/2013/EU

2016-03 adjustment according Regulation 1221/2015/EU

2017-08 adjustment according the Ordinance on Ethanol Denaturation 2016/1867/EU

2017-11 adjustment according the ECHA registration dossier

2022-11 adjustment according Regulation 878/2020/EU

16.5 Further information

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16.6 Legend / Abbreviations



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Safety Data Sheet

according to Regulations REACH 1907/2006/EC

REF: 918101

NANOCOLOR Lead, without CCI4

Page: 17/18

Printing date: 03.08.2026

Date of issue: 16.06.2026

Version: 2.2.7.2

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:	fish, 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:	fish, 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



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Safety Data Sheet

according to Regulations REACH 1907/2006/EC

REF: 918101

NANOCOLOR Lead, without CCl₄

Page: 18/18

Printing date: 03.08.2026

Date of issue: 16.06.2026

Version: 2.2.7.2

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.