

Safety Data Sheet

according to Regulations 1907/2006/EC (REACH) and 2015/830/EU

REF: 91816	NANOCOLOR Chlorine	Page: 1/9
Printing date: 02.06.2020	Date of issue: 26.07.2018	

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

1.1 Product identifier

REF 91816
 Product name NANOCOLOR Chlorine

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 100 mL Chlorine R1
 1 x 20 g Chlorine-2
 1 x 20 mL Chlorine-3

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
 Neumann-Neander-Str. 6-8, 52355 Dueren, GERMANY
 Tel.: +49 2421 969 0

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

1.4 Emergency telephone number

Information not necessary.

You find our current versions of SDS (22 languages) in Internet: <http://www.mn-net.com/SDS>

SECTION 2: Hazard identification

2.0 Classification of the complete product

2.1 Classification of the substance or mixture

100 mL Chlorine R1

Signal word Do not need labelling as hazardous
 -

No hazard class

20 g Chlorine-2

Signal word Do not need labelling as hazardous
 -

No hazard class

20 mL Chlorine-3

Signal word Do not need labelling as hazardous
 -

No hazard class



Safety Data Sheet

according to Regulations 1907/2006/EC (REACH) and 2015/830/EU

REF: 91816	NANOCOLOR Chlorine	Page: 2/9
Printing date: 02.06.2020	Date of issue: 26.07.2018	

2.2 Label elements

100 mL Chlorine R1

Do not need labelling as hazardous
Signal word: -

20 g Chlorine-2

Do not need labelling as hazardous
Signal word: -

20 mL Chlorine-3

Do not need labelling as hazardous
Signal word: -

2.3 Other hazards

Possible hazards from physicochemical properties

According to our current status of knowledge and experience we state, that this product does not contain any substances, which - in accordance with EC regulations 1272/2008/EC, 1907/2006/EC and German Regulations for Hazardous goods - have to be declared as dangerous goods, either because of their applied concentration or because of their total amount in anyone kit. An individual package has considerably less hazardous potential. ---

Information pertaining to particular risks to human and possible symptoms

Information pertaining to particular risks to the environment

Other hazards

SECTION 3: Composition/information on ingredients

3.1 Substances or 3.2 Mixtures

100 mL Chlorine R1

Chemical:	<i>phosphate buffer solution</i>	CAS No.:	-
Classification:	No criteria for classification or naming of chemical not required.		
Formula:	$K/Na_{1-3} H_{2-0} PO_4 \cdot x H_2 O$		
TSCA Inventory:	all listed		
KE No.:	listed		
Concentration:	1 - <5 %		
acc. CLP (GHS):	The criteria for classification are not fulfilled.		

20 g Chlorine-2

Chemical:	<i>boric acid</i>	CAS No.:	10043-35-3
Classification:	H360FD, Repr. 1B		
Formula:	$H_3 BO_3$		
TSCA Inventory:	listed		
REACH Reg. No.:	01-2119486683-25-0024		
SVHC listed:	listed (18/06/2010)		
EC No.:	233-139-2	Indice No.:	005-007-00-2
RTECS:	ED4550000	MFCD:	00011337
KE No.:	KE-03499		
Concentration:	0.5 - <5.5 %	Correlation factor:	x 0.17 (= %B)
The classification refers to weight percent of the metal (according to CLP Regulation 2008/1272/EC Annex VI, 1.1.3.2 Note 1)			
acc. CLP (GHS):	The criteria for classification are not fulfilled.		

Safety Data Sheet

according to Regulations 1907/2006/EC (REACH) and 2015/830/EU

REF: 91816 NANOCOLOR Chlorine Page: 3/9
 Printing date: 02.06.2020 Date of issue: 26.07.2018

Chemical: *tri-sodium citrate* CAS No.: 6132-04-3
 Classification: No criteria for classification or naming of chemical not required.
 Formula: $C_6H_5Na_3O_7 \cdot 2H_2O$
 TSCA Inventory: listed (CAS 68-04-2)
 REACH Reg. No.: 01-2119457027-40-xxxx
 EC No.: 200-675-3
 RTECS: GE8300000
 KE No.: KE-20843
 Concentration: 40 - <60 %
 acc. CLP (GHS): The criteria for classification are not fulfilled.

Chemical: *N,N-Diethyl-1,4-phenylene diammonium sulfate* CAS No.: 6283-63-2
 Classification: H302, Acute Tox. 4 oral, H312, Acute Tox. 4 derm.
 Formula: $C_{10}H_{16}N_2 \cdot H_2O$
 Pseudonym: N,N-diethylbenzene-1,4-diammonium sulfate
 TSCA Inventory: listed (CAS 6065-27-6)
 EC No.: 228-500-6 Indice No.: 612-080-00-X
 RTECS: SS9625000 MFCD: 00012993
 Concentration: 1 - <5 %
 acc. CLP (GHS): The criteria for classification are not fulfilled.

Chemical: *potassium dihydrogen phosphate* CAS No.: 7778-77-0
 Classification: No criteria for classification or naming of chemical not required.
 Formula: KH_2PO_4
 TSCA Inventory: listed
 REACH Reg. No.: 01-2119490224-41-XXXX
 EC No.: 231-913-4
 RTECS: TC6615500 MFCD: 00011401
 KE No.: KE-28622
 Concentration: 5 - <25 %
 acc. CLP (GHS): The criteria for classification are not fulfilled.

20 mL Chlorine-3

Chemical: *potassium iodide* CAS No.: 7681-11-0
 Classification: H319, Eye Irrit. 2
 Formula: KI
 TSCA Inventory: listed
 REACH Reg. No.: YES, confidential
 EC No.: 231-659-4
 RTECS: TT29750000 MFCD: 00011405
 KE No.: not listed
 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%.

SECTION 4: First aid measures

4.1 Description of first aid measures

Place insured person out of danger zone to fresh air immediately.

4.1.1 After SKIN Contact
 Not necessary.

4.1.2 After EYE Contact
 Not necessary.

4.1.3 After INHALATION of vapours
 Not necessary. ---

4.1.4 After ORAL Intake
 Not necessary. ---

Safety Data Sheet

according to Regulations 1907/2006/EC (REACH) and 2015/830/EU

REF: 91816

NANOCOLOR Chlorine

Page: 4/9

Printing date: 02.06.2020

Date of issue: 26.07.2018

4.2 Most important symptoms and effects, both acute and delayed

4.3 Indication of any immediate medical attention and special treatment needed

No additionally recommendations. ---

SECTION 5: Firefighting measures

5.1 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.

5.2 Special hazards arising from the substance or mixture

None.

5.3 Advice for firefighters

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

5.4 Additional information

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Do not breathe vapours. Not necessary.

6.2 Environmental precautions

not necessary

6.3 Methods and material for containment and cleaning up

Clean working area with water. Flush used water into drains.

6.4 Reference to other sections

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Handling in accordance with the test instruction, that comes with the product.

7.2 Conditions for safe storage, including any incompatibilities

The original product package of MACHEREY-NAGEL allows a safe storage.

Storage class (VCI): 6.1D

Water hazard class (DE): 3

7.2.1 Requirements for stock rooms and containers

Keep original product packages tightly closed during handling and storage.

7.3 Specific end use(s)

Product for analytical use.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

100 mL Chlorine R1

Chemical: *phosphate buffer solution*

CAS No.: -

20 g Chlorine-2

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

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Safety Data Sheet

according to Regulations 1907/2006/EC (REACH) and 2015/830/EU

REF: 91816	NANOCOLOR Chlorine	Page: 5/9
Printing date: 02.06.2020	Date of issue: 26.07.2018	

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: *tri-sodium citrate* CAS No.: 6132-04-3

Chemical: *N,N-Diethyl-1,4-phenylene diammonium sulfate* CAS No.: 6283-63-2

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: *potassium dihydrogen phosphate* CAS No.: 7778-77-0

20 mL Chlorine-3

Chemical: *potassium iodide* CAS No.: 7681-11-0

8.2 Exposure controls

Not necessary. Good ventilation and extraction system in the room, floor resistant to chemicals with floor drainage and washing facilities.

8.2.1 Respiratory protection

Not necessary.

8.2.2 Hand protection

Not necessary.

8.2.3 Eye protection

Not necessary.

8.2.4 Skin protection

Not necessary.

8.2.5 Personal hygiene

Information not necessary.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

100 mL Chlorine R1

Appearance: liquid	Colour: colourless	Odor: odorless
pH: 6-7		
Specific gravity: 1,02 g/cm ³		
Solubility in water: 0-100 %		

20 g Chlorine-2

Appearance: powder (solid)	Colour: colourless	Odor: odorless
pH: 6		
Solubility in water: 0-5 %		

20 mL Chlorine-3

Appearance: liquid	Colour: colourless	Odor: alcoholic
pH: 9		
Flash point: 24 °C		
Specific gravity: 0,93 g/cm ³		
Solubility in water: 0-100 %		

9.2 Other information

Data for the other parameters of the mixtures are not available, because no registration and no chemical safety report is required.

Relevant Properties of Substance Group

Safety Data Sheet

according to Regulations 1907/2006/EC (REACH) and 2015/830/EU

REF: 91816

NANOCOLOR Chlorine

Page: 6/9

Printing date: 02.06.2020

Date of issue: 26.07.2018

SECTION 10: Stability and reactivity

10.1 Reactivity

None

10.2 Chemical stability

No known instability.

10.3 Possibility of hazardous reactions

None.

10.4 Conditions to avoid

Not known. Observe labeled storage temperature. ---

10.5 Incompatible materials

Not known.

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 toxicological effects

Following information is valid for pure substances. Quantitative data on the toxicity of this product are not available.

100 mL Chlorine R1

Chemical: *phosphate buffer solution*
 TSCA Inventory: all listed
 Korea Exist.Chem.Inventory: listed

CAS No.: -

20 g Chlorine-2

Chemical: *boric acid*
 TSCA Inventory: listed
 Australia NICNAS: not listed
 Japan CSCL/PRTR: PRTR: ≥1,0%B class I, Japan PDSCL: 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 mg/m³
 LD50_{drm rat}: >2000 mg/kg
 EU carcinogen: R_D 1B, R_F 1B
 TRGS 905 (DE): R_E 2, R_F 2

CAS No.: 10043-35-3

Chemical: *tri-sodium citrate*
 TSCA Inventory: listed (CAS 68-04-2)
 Korea Exist.Chem.Inventory: KE-20843
 LD50_{orl rat}: >8000 mg/kg

CAS No.: 6132-04-3

Chemical: *N,N-Diethyl-1,4-phenylene diammonium sulfate*
 TSCA Inventory: listed (CAS 6065-27-6)
 Australia NICNAS: not listed
 Japan CSCL/PRTR: not listed, Japan PDSCL: not listed
 Japan ISHL: not listed
 South Korea TCCA: not listed
 LD50_{orl rat}: 497 mg/kg

CAS No.: 6283-63-2

Chemical: *potassium dihydrogen phosphate*
 TSCA Inventory: listed
 Korea Exist.Chem.Inventory: KE-28622
 LD50_{orl rat}: 4640 mg/kg
 LD50_{drm rbt}: >4640 mg/kg

CAS No.: 7778-77-0

Safety Data Sheet

according to Regulations 1907/2006/EC (REACH) and 2015/830/EU

REF: 91816

NANOCOLOR Chlorine

Page: 7/9

Printing date: 02.06.2020

Date of issue: 26.07.2018

20 mL Chlorine-3

Chemical: *potassium iodide*
 TSCA Inventory: listed
 Korea Exist.Chem.Inventory: not listed
 LD50_{orl rat}: 2779 mg/kg

CAS No.: 7681-11-0

SECTION 12: Ecological information

12.1 Toxicity

Following information is valid for pure substances.

100 mL Chlorine R1

Chemical: *phosphate buffer solution*
 Water hazard class (DE): 1
 Storage class (VCI): 12

CAS No.: -

20 g Chlorine-2

Chemical: *boric acid*
 PNEC_(fresh water): 2.9 mg/L
 PNEC = Predicted No Effect Concentration
 LC50_{fish/96h}: [4d] 79.7 mg/L
 EC50_{daphnia/48h}: 91-165 mg/L
 IC50_{scenedesmus quadricauda/72h}: [72h] 52.4 mg/L
 EC10_{pseudomonas putita/16h}: [EC10] 10 mg/L
 Water hazard class (DE): 1 WGK No.: 0315
 Dispersion coefficient_(octanol-water): -1.09
 Storage class (VCI): 6.1 D

CAS No.: 10043-35-3

Chemical: *tri-sodium citrate*
 LC50_{fish/96h}: 18-32 g/L
 EC50_{daphnia/48h}: 5.6-10 g/L
 EC50_{chlorella vulgaris/5d}: >18-32 g/L
 EC10_{pseudomonas putita/16h}: EC50_{ps. fluorescens/8h}: >1.8-3.2 g/L
 Water hazard class (DE): 1
 Storage class (VCI): 12-13

CAS No.: 6132-04-3

Chemical: *N,N-Diethyl-1,4-phenylene diammonium sulfate*
 Water hazard class (DE): 3
 Storage class (VCI): 12-13

CAS No.: 6283-63-2

Chemical: *potassium dihydrogen phosphate*
 LC50_{leuciscus idus/96h}: 900_{48h} mg/L
 Water hazard class (DE): 1
 Storage class (VCI): 12-13

CAS No.: 7778-77-0

20 mL Chlorine-3

Chemical: *potassium iodide*
 LC50_{fish/96h}: 2190 mg/L
 Water hazard class (DE): 1
 Dispersion coefficient_(octanol-water): 0.04
 Storage class (VCI): 12-13

CAS No.: 7681-11-0

12.2 Persistence and degradability

not necessary

12.3 Bioaccumulative potential

not necessary

12.4 Mobility in soil

not necessary

Safety Data Sheet

according to Regulations 1907/2006/EC (REACH) and 2015/830/EU

REF: 91816

NANOCOLOR Chlorine

Page: 8/9

Printing date: 02.06.2020

Date of issue: 26.07.2018

12.5 Results of PBT and vPvB assessment

no data available

12.6 Other adverse effects

no additional data available

SECTION 13: Disposal considerations

Not necessary.

13.1 Waste treatment methods

GENERAL: Empty solids into municipal waste, empty liquids diluted into drains. Normally it is possible to empty small amounts (diluted!) into drains. **Not for** mercury containing test solutions, please collect for disposal of hazardous waste.

SECTION 14: Transport information

14.1 - 14.4 Not necessary

14.5 Environmental hazards

none

14.6 Special precautions for user

not necessary

14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code

not applicable

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

German act governing protection from hazardous substances (Chemicals Act / Chemikaliengesetz- ChemG), revised on August 2013
 German order governing protection from hazardous substances (Ordinance on Hazardous Substances / Gefahrstoffverordnung - GefStoffV), revised on November 2010, according to Directive 98/24/EC
 MN Leaflet/User manual, also see www.mn-net.com
 Look for your country-specific regulations.

15.2 Chemical safety assessment

SECTION 16: Other information

16.1 List of H and P phrases

16.1.1 List of relevant H phrases

16.1.2 List of relevant P phrases

16.2 Training advice

Regular safety training.

16.3 Recommended restriction on use

None

16.4 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.

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16.5 Sources of key data

Regulation 790/2009/EU adaptation of CLP regulation 1272/2008/EU to technical and scientific progress
 Regulation 453/2010/EU REACH - REQUIREMENTS FOR THE COMPILATION OF SAFETY DATA SHEETS
 Regulation 487/2013/EU, 4th adaptation of CLP regulation to technical and scientific progress
 Regulation 669/2018/EU, 4th adaptation of CLP regulation to technical and scientific progress
 Regulation 1480/2018/EU, 4th adaptation of CLP regulation to technical and scientific progress
 TRGS 900, German engineering rules governing limits in air at work, updated 03/2019

www.mn-net.com

Safety Data Sheet

according to Regulations 1907/2006/EC (REACH) and 2015/830/EU

REF: 91816

NANOCOLOR Chlorine

Page: 9/9

Printing date: 02.06.2020

Date of issue: 26.07.2018

SUVA .CH, Limits in air at work 2009, revised on 01.2009

KÜHN, BIRETT Merkblätter Gefährliche Arbeitsstoffe (Data Sheets of Hazardous Substances)

Revisions/Updates

Reason for Revision: 2016-03 Adaptation of regulation 1221/2015/EU