

Safety Data Sheet

according to Regulations REACH 1907/2006/EC

REF: 918072
Printing date: 15.05.2024

NANOCOLOR AOX expansion kit
Date of issue: 18.07.2022

Page: 1/12
Version: 2.2.2.2

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

1.1 Product identifier

REF 918072
Product name NANOCOLOR AOX expansion kit
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 4 g AOX 3 (R5) UFI: TW2U-J3R3-N20Y-2G4V
1 x 4 g AOX 3 (R6) UFI: GY2U-23EG-Y20F-RTQX

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>>

SECTION 2: Hazard identification

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



GHS03 GHS06 GHS07 GHS08

Signal word DANGER

Hazard identification	Hazard classes/categories
H272	Ox. Liq. 2
H301	Acute Tox. 3 oral
H315	Skin Irrit. 2
H317	Skin Sens. 1
H319	Eye Irrit. 2
H332	Acute Tox. 4 inh.
H334	Resp. Sens. 1
H335	resp. irrit. STOT SE 3

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

4 g AOX 3 (R6)



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REF: 918072

NANOCOLOR AOX expansion kit

Page: 2/12

Printing date: 15.05.2024

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Version: 2.2.2.2



GHS03 GHS06 GHS07

Signal word

DANGER

Hazard identification

Hazard classes/categories

H272	Ox. Liq. 2
H301	Acute Tox. 3 oral
H319	Eye Irrit. 2
H332	Acute Tox. 4 inh.

4 g AOX 3 (R5)



GHS03 GHS07 GHS08

Signal word

DANGER

Hazard identification

Hazard classes/categories

H272	Ox. Liq. 2
H302	Acute Tox. 4 oral
H315	Skin Irrit. 2
H317	Skin Sens. 1
H319	Eye Irrit. 2
H334	Resp. Sens. 1
H335	resp. irrit. STOT SE 3

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** 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. Oxidizing mixtures with signal word: **DANGER** and **H272** must not be labelled with H and P phrases **until 125 mL**.

4 g AOX 3 (R6)



GHS03 GHS06

Signal word: DANGER

H301

Toxic if swallowed.

P264, P270, P301+310, P330, P405, P501

Wash hands thoroughly after handling. Do not eat, drink or smoke when using this product. IF SWALLOWED: Immediately call a POISON CENTER/ doctor. Rinse mouth. Store locked up. Dispose of contents/container to regulated waste treatment.

4 g AOX 3 (R5)



GHS03 GHS07 GHS08

Signal word: DANGER

Safety Data Sheet

according to Regulations REACH 1907/2006/EC

REF: 918072

NANOCOLOR AOX expansion kit

Page: 3/12

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H317, H334

May cause an allergic skin reaction. May cause allergy or asthma symptoms or breathing difficulties if inhaled.

P261sh, P280sh, P284, P302+352, P333+313, P342+311, P362+364, P501

Avoid breathing dust/vapours. Wear protective gloves/eye protection. [In case of inadequate ventilation] wear respiratory protection. IF ON SKIN: Wash with plenty of water. If skin irritation or rash occurs: Get medical advice/attention. If experiencing respiratory symptoms: Call a POISON CENTER/doctor. Take off contaminated clothing and wash it before reuse. Dispose of contents/container to regulated waste treatment.

Label elements of the complete product



GHS03



GHS06



GHS08

Signal word: DANGER

H301, H317, H334

Toxic if swallowed. May cause an allergic skin reaction. May cause allergy or asthma symptoms or breathing difficulties if inhaled.

P261sh, P264, P270, P280sh, P284, P301+310, P302+352, P330, P333+313, P362+364, P405, P501

Avoid breathing dust/vapours. Wash hands thoroughly after handling. Do not eat, drink or smoke when using this product. 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 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

In the case of pH values are less than 5 or higher than 9 then it is irritant.

Information pertaining to particular risks to human and possible symptoms

Cause severe after oral intake, impairments of health or can lead to death even when only ingested in small quantities. Cause after inhalation of vapours/dust, skin contact, impairments of health when ingested in small quantities. May cause sensitization by skin contact, also in repeated contact of small amounts. May cause allergy or asthma symptoms or breathing difficulties if inhaled.

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

SECTION 3: Composition / information on ingredients

3.1 Substances or 3.2 Mixtures

4 g AOX 3 (R6)

Substance name: *barium nitrate*

CAS No.: 10022-31-8

Substance rating: H272, Ox. Sol. 2, H301, Acute Tox. 3 oral, H319, Eye Irrit. 2, H332, Acute Tox. 4 inh.

Formula: $\text{Ba}(\text{NO}_3)_2$

Pseudonym (de): Bariumdinitrat, Barytsalpeter

REACH Reg. No.: 01-2119986880-22-xxxx

EC No.: 233-020-5

Indice No.: 056-002-00-7

Concentration: 70 - <100 %

Correlation factor: x 0.53 (= %Ba)

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): H272, Ox. Liq. 2, H301, Acute Tox. 3 oral, H319, Eye Irrit. 2, H332, Acute Tox. 4 inh.

4 g AOX 3 (R5)



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Page: 4/12

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Version: 2.2.2.2

Substance name: *sodium peroxodisulfate*
CAS No.: 7775-27-1

Substance rating: H272, Ox. Sol. 2, H302, Acute Tox. 4 oral, H315, Skin Irrit. 2, H317, Skin Sens. 1, H319, Eye Irrit. 2, H334, Resp. Sens. 1, H335, resp. irrit. STOT SE 3
Formula: $\text{Na}_2\text{O}_8\text{S}_2$
Pseudonym (de): Natriumpersulfat
REACH Reg. No.: 01-2119495975-15-xxxx
EC No.: 231-892-1
Concentration: 80 - <100 %
acc. CLP (GHS): H272, Ox. Liq. 2, H302, Acute Tox. 4 oral, H315, Skin Irrit. 2, H317, Skin Sens. 1, H319, Eye Irrit. 2, H334, Resp. Sens. 1, H335, resp. irrit. STOT SE 3

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

May cause allergy or asthma symptoms or breathing difficulties if inhaled. Chronic effects: Repeated contact, even in small amounts, can lead to sensitization.

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. 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.



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NANOCOLOR AOX expansion kit

Page: 5/12

Printing date: 15.05.2024

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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): 5.1B

Water hazard class (DE): 1

7.2.1 Requirements for stock rooms and containers

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

4 g AOX 3 (R6)

Chemical: *barium nitrate*

CAS No.: 10022-31-8

EU value: 0,5 Ba e mg/m³

TRGS 900 (DE): 0,5 Ba E mg/m³
E/e respirable

Short-term exposure factor: 1 (I)

skin resorptive (H), respiratory sensitizable (Sa), skin sensitizable (Sh), teratogenic (Z) not securely excluded / (Y) certainly excluded

SUVA(CH) MAK value: 0,5 e mg/m³

NIOSH: TWA 0.5 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: TWA 0.5 mg/m³

4 g AOX 3 (R5)

Chemical: *sodium peroxodisulfate*

CAS No.: 7775-27-1

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



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NANOCOLOR AOX expansion kit

Page: 6/12

Printing date: 15.05.2024

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Version: 2.2.2.2

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

4 g AOX 3 (R6)

a) State of aggregation:	solid
b) Colour:	colourless
c) Odor:	odorless
d) Melting point:	592 °C
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:	5-7
l) Kinematic viscosity:	no data available
m) Solubility in water:	0-10 %
n) Dispersion coefficient (K _{ow}):	no data available
o) Vapour pressure (20°C):	no data available
p) Specific gravity:	3,24 sol.
q) Relative vapour density (air=1):	no data available
r) Particle size:	no data available

4 g AOX 3 (R5)

a) State of aggregation:	solid
b) Colour:	colourless
c) Odor:	odorless
d) Melting point:	instable < 200 °C
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:	5-7
l) Kinematic viscosity:	no data available
m) Solubility in water:	0-35 %
n) Dispersion coefficient (K _{ow}):	no data available
o) Vapour pressure (20°C):	no data available



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Safety Data Sheet

according to Regulations REACH 1907/2006/EC

REF: 918072

NANOCOLOR AOX expansion kit

Page: 7/12

Printing date: 15.05.2024

Date of issue: 18.07.2022

Version: 2.2.2.2

p) Specific gravity: 2,40 sol.
q) Relative vapour density (air=1): no data available
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.

□ □

SECTION 10: Stability and reactivity

10.1 Reactivity

no further data available.

10.2 Chemical stability

no known instability.

10.3 Possibility of hazardous reactions

No further data available.

10.4 Conditions to avoid

Persulfates decompose when heated by splitting off oxygen. 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.

4 g AOX 3 (R6)

Chemical: *barium nitrate* CAS No.: 10022-31-8
TSCA Inventory: listed
Exposure Routes: inhalation, ingestion, skin and/or eye contact
Target Organs: Eyes, skin, respiratory system, heart, central nervous system
Symptoms: irritation eyes, skin, upper respiratory system; skin burns; gastroenteritis; muscle spasm; slow pulse, extrasystoles; hypokalemia
Japan CSCL/PRTR: not listed, Japan PDSCL: Deleterious substance
Japan ISHL: listed $\geq 1,0\%$ / $\geq 1,0\%$,
LD50 orl rat: 335 mg/kg
Acute Effects: Cause severe after oral intake, impairments of health or can lead to death even when only ingested in small quantities. Acute Effects: Cause after skin contact, impairments of health when ingested in small quantities.

4 g AOX 3 (R5)

Chemical: *sodium peroxodisulfate* CAS No.: 7775-27-1
TSCA Inventory: listed California Proposition 65 List: not listed
Australia NICNAS: Yes (PEC/18) Canada CEPA 1999: DSL Yes
Japan CSCL/PRTR: not listed, Japan PDSCL: not listed
Japan ISHL: listed $\geq 1,0\%$ / $\geq 0,1\%$, Article 57-2 (SDS required)
South Korea TCCA: not listed
Korea Exist.Chem.Inventory: KE-12369
LD50 orl rat: 902 mg/kg
Acute Effects: Cause after oral intake, inhalation of vapours/dust, skin contact, impairments of health when ingested in small quantities.



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REF: 918072

NANOCOLOR AOX expansion kit

Page: 8/12

Printing date: 15.05.2024

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Chronic Effects: May cause sensitization by skin contact, also in repeated contact of small amounts. May cause allergy or asthma symptoms or breathing difficulties if inhaled.

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.

4 g AOX 3 (R6)

Substance name: *barium nitrate*

CAS-Nr.: 10022-31-8

Do not release into the environment.

Water hazard class (DE): 1 WGK No.: 0304

Storage class (VCI): 12

4 g AOX 3 (R5)

Substance name: *sodium peroxodisulfate*

CAS-Nr.: 7775-27-1

Water hazard class (DE): 1 WGK No.: 1352

Storage class (VCI): 5.1 B

12.2 Persistence and degradability

12.3 Bioaccumulative potential

12.4 Mobility in soil

12.5 Results of PBT and vPvB assessment

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Endocrine disrupting properties

no data available

12.7 Other adverse effects

no additional data available

SECTION 13: Disposal considerations

Please observe local regulations for collection and disposal of hazardous waste and contact waste disposal company, where you will obtain information on laboratory waste disposal (waste code number 16 05 06). Close container tightly.

13.1 Waste treatment methods

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



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Date of issue: 18.07.2022

Page: 9/12
Version: 2.2.2.2

Maritime transport IMDG

EmS:

F-A, S-P

Staukategorie:

A

Or use **Alternative declaration for transportation:**

14.1 UN number: 1446

14.2 UN proper shipping name: Barium nitrate

14.3 Class: 5.1 Additionally class: **6.1**

14.4 Packing group: II

Road transport ADR

Classification code:

OT2

Limited Quantity:

1 Kg

Excepted Quantity:

E 2

Tunnel restriction code:

E

Air transport IATA DGR

Limited Quantity:

PAX: 558

max. quantity PAX: 5 Kg

CAO: 562

max. quantity CAO: 25 Kg

Excepted Quantity:

E 2

Maritime transport IMDG

EmS:

F-A, S-Q

Staukategorie:

A

14.5 Environmental hazards

none, contains only small quantities of hazardous substances

14.6 Special precautions for user

not necessary

14.7 Carriage in bulk by sea in accordance with IMO instruments

Not applicable.

SECTION 15: Regulatory information

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

Chemicals Prohibition Ordinance - (DE: ChemVerbotsV), aktualisiert Jan 2017

Dangerous Substances Protection Act (DE: Chemikaliengesetz - ChemG), Aug 2013, Stand: Okt 2020

Ordinance on protection against dangerous substances (E: Gefahrstoffverordnung - GefStoffV), Nov 2010, Stand: Mrz 2017

TRGS 201, Classification and labeling of activities involving hazardous substances, Feb 2017

TRGS 220, National aspects when preparing safety data sheets, Jan 2017

TRGS 400, Risk assessment for activities involving hazardous substances, Jul 2017

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

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

in preparation

16.2 List of H and P phrases

16.2.1 List of relevant H phrases

H272

May intensify fire; oxidizer.



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Safety Data Sheet

according to Regulations REACH 1907/2006/EC

REF: 918072	NANOCOLOR AOX expansion kit	Page: 10/12
Printing date: 15.05.2024	Date of issue: 18.07.2022	Version: 2.2.2.2

H301	Toxic if swallowed.
H302	Harmful if swallowed.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335	May cause respiratory irritation.

16.2.2 List of relevant P phrases

P261sh	Avoid breathing dust/vapours.
P264	Wash hands thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
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.
P362+364	Take off 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

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)

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

2017-11 adjustment according the ECHA registration dossier

2022-11 adjustment according Regulation 878/2020/EU

16.5 Further information

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Safety Data Sheet

according to Regulations REACH 1907/2006/EC

REF: 918072

NANOCOLOR AOX expansion kit

Page: 11/12

Printing date: 15.05.2024

Date of issue: 18.07.2022

Version: 2.2.2.2

16.6 Legend / Abbreviations

acc:	according
ADR:	Convention concerning the International Carriage of Dangerous Goods by Road
Act:	acute
BAT:	biological workplace tolerance value
CAO:	Cargo Aircraft Only
Carc:	carcinogen
CAS:	Chemical Abstracts Service
CLP:	Classification, Labelling and Packaging regulation
CMR:	carcinogen, mutagen, reproduction toxic
Corr:	corrosive
COD:	chemical oxygen demand
CSCL:	Chemical Substance Control Law (Jp)
Dam:	damage
DNEL:	Derived No-Effect Level (for workers)
derm:	dermal
dog:	dog
EC10:	Concentration causing a toxic effect in 10% of the test organisms
EC:	European Community
EC-Nr:	Substance number of the EC substance inventory
EmS:	Guide to accident management measures on ships
EU:	European Union
fish:	fish (not specified)
GHS:	Global Harmonized System of Classification and Labeling of Chemicals
gpg:	guinea pig
ICAO:	International Civil Aviation Organization
ihl:	inhaled
IMDG:	International Maritime Dangerous Goods Code
intrav:	intravenous
ipt:	intraperitoneal
ISHL:	Industrial Safety and Health Law (Jp)
LC50:	lethal concentration 50%
LD50:	lethal dose 50%
leuciscus idus:	fisch, ide, orfe
MAK:	maximum workplace concentration
Met:	Metall
mus:	mouse
Muta:	mutagen
NIOSH:	National Institute for Occupational Safety and Health (US)
NRD:	Non-rapidly degradable
onchorhynchus mykiss:	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

Safety Data Sheet

according to Regulations REACH 1907/2006/EC

REF: 918072

NANOCOLOR AOX expansion kit

Page: 12/12

Printing date: 15.05.2024

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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.