Safety Data Sheet

according to Regulations REACh 1907/2006/EC

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

1.1 Product identifier

REF 985007
Product name NANOCOLOR AOX 3

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

20 x 1 mL AOX 3 (R0)	UFI: 423U-K33W-820Y-D5A0
2 x 11 mL Chloride 50/200 (Cl^- 2)	UFI: F2UV-X38K-X207-FVUK
2 x 100 mL AOX (R1)	
1 x 105 mL AOX (R3)	UFI: DE3U-K3VG-G20X-1HN8
1 x 75 mL AOX (R4)	UFI: MG3U-33JV-T20E-QV7A
20 x NANOSORB cartridge	
1 x 20x 35 mg NANOFIX AOX 3 (R2)	UFI: 9M7U-D3PX-H206-F86E
1 x 5 mL Blank (NULL)	

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

GHS02 GHS03 GHS05 GHS06 GHS07 GHS08

Signal word DANGER

Hazard identification	Hazard classes/categories
H225	Flam. Liq. 2
H272	Ox. Liq. 2
H290	Met. Corr. 1
H301	Acute Tox. 3 oral
H311	Acute Tox. 3 derm.
H314	Skin Corr. 1B
H317	Skin Sens. 1
H331	Acute Tox. 3 inh.
H334	Resp. Sens. 1
H335	STOT SE 3
H370	STOT SE 1
H373	STOT RE 2
H413	Aquatic Chronic 4

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

105 mL AOX (R3)

GHS07

Signal word WARNING

Hazard identification	Hazard classes/categories
H315	Skin Irrit. 2
H319	Eye Irrit. 2

11 mL Chloride 50/200 (Cl^- 2)

GHS02 GHS06 GHS08

Signal word DANGER

Hazard identification	Hazard classes/categories
H225	Flam. Liq. 2
H301	Acute Tox. 3 oral
H311	Acute Tox. 3 derm.
H331	Acute Tox. 3 inh.
H370	STOT SE 1
H373	STOT RE 2
H413	Aquatic Chronic 4

1 mL AOX 3 (R0)

GHS05 GHS07

Signal word DANGER

Hazard identification	Hazard classes/categories
H290	Met. Corr. 1
H314	Skin Corr. 1B
H332	Acute Tox. 4 inh.

100 mL AOX (R1)

Do not need labelling as hazardous

Signal word -

No hazard class

75 mL AOX (R4)

GHS05 GHS07

Signal word DANGER

Hazard identification	Hazard classes/categories
H290	Met. Corr. 1
H315	Skin Irrit. 2
H318	Eye Dam. 1

5 mL Blank (NULL)

Do not need labelling as hazardous

Signal word -

No hazard class

20x 35 mg NANOFIX AOX 3 (R2)

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	STOT SE 3

NANOSORB cartridge

Do not need labelling as hazardous

Signal word -

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 identificator(s) (EU 1272/2008 Annex I - 1.5.1.2). Inner packages up to 10 mL need max. 2 symbols (Annex I - 1.5.2.4.1 / 2). Harmful chemicals/mixtures with signal word: **WARNING** 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. Oxidizing mixtures with signal word: **DANGER** and **H272** must not be labelled with H and P phrases **until 125 mL** . 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).

105 mL AOX (R3)

GHS07

Signal word: WARNING

11 mL Chloride 50/200 (Cl^- 2)

GHS02 GHS06 GHS08

Signal word: DANGER
H301, H311, H331, H370
Toxic if swallowed.Toxic in contact with skin.Toxic if inhaled.Causes damage to organs.
P260sh, P280sh, P301+310, P302+352, P405
Do not breathe dust/vapours.Wear protective gloves/eye protection.IF SWALLOWED: Immediately call a POISON CENTER/ doctor.IF ON SKIN: Wash with plenty of water.Store locked up.

1 mL AOX 3 (R0)

GHS05 GHS07

Signal word: DANGER
H314
Causes severe skin burns and eye damage.
P260sh, P280sh, P303+361+353, P305+351+338, P310
Do not breathe dust/vapours.Wear protective gloves/eye protection.IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.Immediately call a POISON CENTER/doctor.

100 mL AOX (R1)

Do not need labelling as hazardous
Signal word: -

75 mL AOX (R4)

GHS05

Signal word: DANGER
H318
Causes serious eye damage.
P280sh, P305+351+338, P310
Wear protective gloves/eye protection.IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.Immediately call a POISON CENTER/doctor.

5 mL Blank (NULL)

Do not need labelling as hazardous
Signal word: -

20x 35 mg NANOFIX AOX 3 (R2)

GHS03 GHS07 GHS08

Signal word: DANGER
H317, H334
May cause an allergic skin reaction.May cause allergy or asthma symptoms or breathing difficulties if inhaled.
P261sh, P280sh, P342+311
Avoid breathing dust/vapours.Wear protective gloves/eye protection.If experiencing respiratory symptoms: Call a POISON CENTER/doctor.

NANOSORB cartridge

Do not need labelling as hazardous
Signal word: -

Label elements of the complete product

GHS02 GHS03 GHS05 GHS06 GHS08

Signal word: DANGER
H301, H311, H314, H317, H331, H334, H370
Toxic if swallowed.Toxic in contact with skin.Causes severe skin burns and eye damage.May cause an allergic skin reaction.Toxic if inhaled.May cause allergy or asthma symptoms or breathing difficulties if inhaled.Causes damage to organs.
P260sh, P280sh, P301+310, P303+361+353, P305+351+338, P405
Do not breathe dust/vapours.Wear protective gloves/eye protection.IF SWALLOWED: Immediately call a POISON CENTER/ doctor.IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.Store locked up.

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. Vapours especially which steam from hot liquids and mist can have a severe irritant effect upon the eyes and the respiratory organs.
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 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. Causes damage to organs.

Information pertaining to particular risks to the environment
Avoid contact of substance/mixture to environment.
PBT: not applicable
vPvB: not applicable

Possible endocrine disrupting effects
no data available

SECTION 3: Composition / information on ingredients

3.1 Substances or 3.2 Mixtures

11 mL Chloride 50/200 (Cl^- 2)

Substance name: *methanol*
CAS No.: 67-56-1

Substance rating: H225, Flam. Liq. 2, H301, Acute Tox. 3 oral, H311, Acute Tox. 3 derm., H331, Acute Tox. 3 inh., H370, STOT SE 1
Formula: CH_4O, CH_3OH
Pseudonym (de): Methylalkohol
REACH Reg. No.: 01-2119433307-44-xxxx
EC No.: 200-659-6 Indice No.: 603-001-00-X
Concentration: 95 - <100 %
acc. CLP (GHS): H225, Flam. Liq. 2, H301, Acute Tox. 3 oral, H311, Acute Tox. 3 derm., H331, Acute Tox. 3 inh., H370, STOT SE 1

Substance name: *mercury(II) thiocyanate*
CAS No.: 592-85-8

Substance rating: H301, Acute Tox. 3 oral, H311, Acute Tox. 3 derm., H331, Acute Tox. 3 inh., H373, STOT RE 2, H400, Aquatic Acute 1, H410, Aquatic Chronic 1
Formula: $Hg(SCN)_2$
Pseudonym (de): Quecksilberrhodanid
EC No.: 209-773-0 Indice No.: 080-004-00-7
Concentration: 0,32 - <0,64 % Correlation factor: x 0.78 (= %Hg)
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): H302, Acute Tox. 4 oral, H312, Acute Tox. 4 derm., H332, Acute Tox. 4 inh., H373, STOT RE 2, H413, Aquatic Chronic 4

20x 35 mg NANOFIX AOX 3 (R2)

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, STOT SE 3
Formula: $Na_2O_8S_2$
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, STOT SE 3

5 mL Blank (NULL)

Substance name: *water*
CAS No.: 7732-18-5

Substance rating: No criteria for classification or naming of chemical not required.
Formula: H_2O
REACH Reg. No.: exempt, Annex IV
EC No.: 231-791-2
Concentration: 90 - <100 %
acc. CLP (GHS): The criteria for classification are not fulfilled.

75 mL AOX (R4)

Substance name: *nitric acid*
CAS No.: 7697-37-2

Substance rating: H272, Ox. Liq. 3, H290, Met. Corr. 1, H314, Skin Corr. 1A, H331, Acute Tox. 3 inh.
Formula: $HNO_3 \cdot H_2O$
Pseudonym (de): Hydrogennitrat, Scheidewasser
REACH Reg. No.: 01-2119487297-23-xxxx
EC No.: 231-714-2 Indice No.: 007-004-00-1
Concentration: 3 - <5 %
acc. CLP (GHS): H290, Met. Corr. 1, H315, Skin Irrit. 2, H318, Eye Dam. 1

1 mL AOX 3 (R0)

Substance name: *nitric acid*
CAS No.: 7697-37-2

Substance rating: H272, Ox. Liq. 3, H290, Met. Corr. 1, H314, Skin Corr. 1A, H331, Acute Tox. 3 inh.
Formula: $HNO_3 \cdot H_2O$
Pseudonym (de): Hydrogennitrat, Scheidewasser
REACH Reg. No.: 01-2119487297-23-xxxx
EC No.: 231-714-2 Indice No.: 007-004-00-1
Concentration: 13 - <20 %
acc. CLP (GHS): H290, Met. Corr. 1, H314, Skin Corr. 1B, H332, Acute Tox. 4 inh.

105 mL AOX (R3)

Substance name: *sodium hydroxide solution*
CAS No.: 1310-73-2

Substance rating: H314, Skin Corr. 1A
Formula: $NaOH \cdot H_2O$
Pseudonym (de): verdünnte Natronlauge
REACH Reg. No.: 01-2119457892-27-xxxx
EC No.: 215-185-5 Indice No.: 011-002-00-6
Concentration: 1 - <2 %
acc. CLP (GHS): H315, Skin Irrit. 2, H319, Eye Irrit. 2

100 mL AOX (R1)

Substance name: *nitric acid*
CAS No.: 7697-37-2

Substance rating: H272, Ox. Liq. 3, H290, Met. Corr. 1, H314, Skin Corr. 1A, H331, Acute Tox. 3 inh.
Formula: $HNO_3 \cdot H_2O$
Pseudonym (de): Hydrogennitrat, Scheidewasser
REACH Reg. No.: 01-2119487297-23-xxxx
EC No.: 231-714-2 Indice No.: 007-004-00-1
Concentration: 0,1 - <1 %
acc. CLP (GHS): The criteria for classification are not fulfilled.

NANOSORB cartridge

Substance name: *NANOSORB cardridges*
CAS No.: -

Substance rating: No criteria for classification or naming of chemical not required.
Concentration: 90 - <100 %
acc. CLP (GHS): The criteria for classification are not fulfilled.

3.3 Remarks

When not listed, mixtures are added with water [CAS No. 7732-18-5] to 100%.List of H and P phrases: see section 16.2.

SECTION 4: First aid measures

4.1 Description of first aid measures

Place insured person out of danger zone to fresh air immediately. Ensure quiet, warmth, and provide resuscitation if necessary. If necessary contact medical advice. 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 for min. 10 minutes with eye washing bottle, eye douche or running water (protect intact eye). Before (if possible) apply eye drops Proxymetacaine 0.5%, if the opening the eyelid convulsion is painful. Further treatment to be carried out by an eye specialist.

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. Do not induce vomiting under any circumstances. Do not make any efforts to neutralise it. Contact medical advice for possible consequences.

4.2 Most important symptoms and effects, both acute and delayed

Damages organs. May cause allergy or asthma symptoms or breathing difficulties if inhaled. Chronic effects: Repeated contact, even in small amounts, can lead to sensitization. Rapid penetration and destruction of the skin. Especially in the heated form.
Causes severe skin burns and eye damage.

4.3 Indication of any immediate medical attention and special treatment needed

CORROSIVE DAMAGE: After SKIN CONTACT rinse with water for a long time. Efforts to neutralise the substance can frequently make matters worse. Apply glucocorticosteroides following inflammatory reactions. After EYE CONTACT rinse immediately with plenty of water for a long time. Eyelid convulsion measures. Name the corrosive chemical. Further treatment must to be carried out by an eye specialist. After INTAKE administer aluminium oxide drug suspensions. Administer a prophylaxis to counter pulmonary oedema following the INGESTION of corrosive aerosols. In the event of RESPIRATORY DISTREES 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, respectively face protection. Regular staff training is necessary, indicating hazards and precautions on the basis of operating instructions. Restrictions on activity must be observed.

6.2 Environmental precautions

Avoid contact of substance/mixture to environment.

PBT: not applicable
vPvB: not applicable

6.3 Methods and material for containment and cleaning up

Bind any escaping liquid with inert absorbent. And dispose in accordance to local regulations for the disposal of hazardous chemicals.
Clean any contaminated equipment and floors with plenty of water.
Collect small amounts of leaked liquid and flush with water into drains.

6.4 Reference to other sections

see information in section 5.4,7,8 and 13

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Handling in accordance with the test instruction, that comes with the product. Use only in well-ventilated working areas. Use a safety bottle when shaking test tubes.

7.2 Conditions for safe storage, including any incompatibilities

Safe storage is guaranteed in the original packaging . Products which are also classified as toxic must be kept under lock and key.
Storage class (German chemical industry): see chapter 12.1

Storage class (VCI): 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.

7.3 Specific end use(s)

Product for analytical use.

SECTION 8: Exposure controls /personal protection

8.1 Control parameters

11 mL Chloride 50/200 (Cl^- 2)

Chemical: *methanol* CAS No.: 67-56-1

DNEL: [derm] 40 mg/kg bw/day; [inh] 260 mg/m³
DNEL = Derived No-Effect Level (for workers)

PNEC (fresh water) : 20.8 mg/Lno hazard identified
PNEC = Predicted No Effected Concentration

EU value: [TWA] 200 ppm / 260 mg/m³
TRGS 900 (DE): 200 ppm / 270 mg/m³
E/e respirable

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

SUVA(CH) MAK value: 200 ppm/ 260 mg/m³
SUVA(CH) BAT value: [U/c,b] 30 mg/L
TRGS 903 (DE): U/c,b 30 mg/L
B blood, U urine, a no limitation, b end of exposition or shift

NIOSH: [TWA, skin] 200 ppm / 260 mg/m³
NIOSH STEL: 250 ppm / 325 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] 200 ppm / 260 mg/m³

Chemical: *mercury(II) thiocyanate* CAS No.: 592-85-8

EU value: [Hg] 0.02 e mg/m³
TRGS 900 (DE): 0,02 $_{Hg}$ E mg/m³
E/e respirable

Short-term exposure factor: 8 (II), H, Sh

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

SUVA(CH) MAK value: [Hg][MAK] 0,02 e/[STEL] 0,16 e mg/m³
SUVA(CH) BAT value: [Krea U/d] 35 µg/L
TRGS 903 (DE): [U/a $_{Kreatinin}$] 25 µg/g
B blood, U urine, a no limitation, b end of exposition or shift

NIOSH: [Hg vapor: TWA $_{skin}$] 0.05; other 0.1 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] 0.1 mg/m³

20x 35 mg NANOFIX AOX 3 (R2)
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

5 mL Blank (NULL)
Chemical: *water* CAS No.: 7732-18-5

75 mL AOX (R4)
Chemical: *nitric acid* CAS No.: 7697-37-2
DNEL: [inh] (1.3) mg/m³
DNEL = Derived No-Effect Level (for workers)

PNEC $_{(fresh\ water)}$: no hazard identified
PNEC = Predicted No Effected Concentration

EU value: 1 ppm / 2.6 mg/m³
TRGS 900 (DE): 1 ppm / 2,6 mg/m³
E/e respirable

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

SUVA(CH) MAK value: 2 ppm / 5 mg/m³
NIOSH: [TWA] 2 ppm / 5 mg/m³
NIOSH STEL: 4 ppm / 10 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: List of highly hazardous chemicals, toxics and reactives Yes (TQ = 500 lbs) n/a; [TWA] 2 ppm / 5 mg/m³

1 mL AOX 3 (R0)
Chemical: *nitric acid* CAS No.: 7697-37-2
DNEL: [inh] (1.3) mg/m³
DNEL = Derived No-Effect Level (for workers)

PNEC $_{(fresh\ water)}$: no hazard identified
PNEC = Predicted No Effected Concentration

EU value: 1 ppm / 2.6 mg/m³
TRGS 900 (DE): 1 ppm / 2,6 mg/m³
E/e respirable

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

SUVA(CH) MAK value: 2 ppm / 5 mg/m³
NIOSH: [TWA] 2 ppm / 5 mg/m³
NIOSH STEL: 4 ppm / 10 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: List of highly hazardous chemicals, toxics and reactives Yes (TQ = 500 lbs) n/a; [TWA] 2 ppm / 5 mg/m³

105 mL AOX (R3)
Chemical: *sodium hydroxide solution* CAS No.: 1310-73-2

100 mL AOX (R1)
Chemical: *nitric acid* CAS No.: 7697-37-2
DNEL: [inh] (1.3) mg/m³
DNEL = Derived No-Effect Level (for workers)

PNEC $_{(fresh\ water)}$: no hazard identified
PNEC = Predicted No Effected Concentration

EU value: 1 ppm / 2.6 mg/m³
TRGS 900 (DE): 1 ppm / 2,6 mg/m³
E/e respirable

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

SUVA(CH) MAK value: 2 ppm / 5 mg/m³
NIOSH: [TWA] 2 ppm / 5 mg/m³
NIOSH STEL: 4 ppm / 10 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: List of highly hazardous chemicals, toxics and reactives Yes (TQ = 500 lbs) n/a; [TWA] 2 ppm / 5 mg/m³

NANOSORB cartridge
Chemical: *NANOSORB cardridges* CAS No.: -

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 or face protection.

8.2.4 Skin protection
Recommended to avoid clothing damage, and 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

11 mL Chloride 50/200 (Cl - 2)

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:	11 °C
i) Flashing temperature:	no data available
j) Decomposition temperature:	no data available
k) pH value:	no data available
l) Kinematic viscosity:	no data available
m) Solubility in water:	no data available
n) Dispersion coefficient $_{(o/w)}$:	no data available
o) Vapour pressure (20°C):	no data available
p) Specific gravity:	no data available
q) Relative vapour density $_{(air=1)}$:	no data available
r) Particle size:	no data available

20x 35 mg NANOFIX AOX 3 (R2)

a) State of aggregation:	solid (lyophilized)
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:	5-7
l) Kinematic viscosity:	no data available
m) Solubility in water:	0-100 %
n) Dispersion coefficient $_{(o/w)}$:	no data available
o) Vapour pressure (20°C):	no data available
p) Specific gravity:	no data available
q) Relative vapour density $_{(air=1)}$:	no data available
r) Particle size:	no data available

5 mL Blank (NULL)

a) State of aggregation:	liquid
b) Colour:	colourless
c) Odor:	odorless
d) Melting point:	no data available
e) Boiling point:	no data available
f) Flammability:	no data available
g) Explosive limits (lower / upper):	no data available
h) Flash point:	no data available
i) Flashing temperature:	no data available
j) Decomposition temperature:	no data available
k) pH value:	6-8
l) Kinematic viscosity:	no data available
m) Solubility in water:	no data available
n) Dispersion coefficient $_{(o/w)}$:	no data available
o) Vapour pressure (20°C):	no data available
p) Specific gravity:	1,00 g/cm³
q) Relative vapour density $_{(air=1)}$:	no data available
r) Particle size:	no data available

75 mL AOX (R4)

a) State of aggregation:	liquid
b) Colour:	colourless
c) Odor:	nitric
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:	0-1
l) Kinematic viscosity:	no data available
m) Solubility in water:	0-100 %
n) Dispersion coefficient $_{(o/w)}$:	no data available
o) Vapour pressure (20°C):	no data available
p) Specific gravity:	no data available
q) Relative vapour density $_{(air=1)}$:	no data available
r) Particle size:	no data available

1 mL AOX 3 (R0)

a) State of aggregation:	liquid
b) Colour:	slightly grey
c) Odor:	nitric
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:	0-1
l) Kinematic viscosity:	no data available
m) Solubility in water:	no data available
n) Dispersion coefficient $_{(o/w)}$:	no data available
o) Vapour pressure (20°C):	no data available
p) Specific gravity:	1,11 g/cm³
q) Relative vapour density $_{(air=1)}$:	no data available
r) Particle size:	no data available

105 mL AOX (R3)

a) State of aggregation:	liquid
b) Colour:	colourless
c) Odor:	odorless
d) Melting point:	no data available
e) Boiling point:	no data available
f) Flammability:	no data available
g) Explosive limits (lower / upper):	no data available
h) Flash point:	no data available
i) Flashing temperature:	no data available
j) Decomposition temperature:	no data available
k) pH value:	13-14
l) Kinematic viscosity:	no data available
m) Solubility in water:	0-100 %
n) Dispersion coefficient $_{(o/w)}$:	no data available
o) Vapour pressure (20°C):	no data available
p) Specific gravity:	no data available
q) Relative vapour density $_{(air=1)}$:	no data available
r) Particle size:	no data available

100 mL AOX (R1)

a) State of aggregation:	liquid
b) Colour:	colourless
c) Odor:	odorless
d) Melting point:	no data available
e) Boiling point:	no data available
f) Flammability:	no data available
g) Explosive limits (lower / upper):	no data available
h) Flash point:	no data available
i) Flashing temperature:	no data available
j) Decomposition temperature:	no data available
k) pH value:	0-1
l) Kinematic viscosity:	no data available
m) Solubility in water:	0-100 %
n) Dispersion coefficient $_{(o/w)}$:	no data available
o) Vapour pressure (20°C):	no data available
p) Specific gravity:	no data available
q) Relative vapour density $_{(air=1)}$:	no data available
r) Particle size:	no data available

NANOSORB cartridge

a) State of aggregation:	solid
b) Colour:	brown
c) Odor:	fusty, mouldy
d) Melting point:	no data available
e) Boiling point:	no data available
f) Flammability:	no data available
g) Explosive limits (lower / upper):	no data available
h) Flash point:	no data available
i) Flashing temperature:	no data available

j) Decomposition temperature:	no data available
k) pH value:	6-8
l) Kinematic viscosity:	no data available
m) Solubility in water:	no data available
n) Dispersion coefficient $_{(o/w)}$:	no data available
o) Vapour pressure (20°C):	no data available
p) Specific gravity:	no data available
q) Relative vapour density $_{(air=1)}$:	no data available
r) Particle size:	no data available

9.2 Other information

No data is available for the other parameters for the mixtures, since no registration and no chemical safety report is required.
Properties relevant to substance groups
Substances are highly volatile and form flammable gas-air mixtures. Substances are highly corrosive.

SECTION 10: Stability and reactivity

10.1 Reactivity

Strong CORROSIVE, no further data available.

10.2 Chemical stability

no known instability.

10.3 Possibility of hazardous reactions

Can react violently with organic material. Possible: &H:EUH031& 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.

11 mL Chloride 50/200 (Cl - 2)

Chemical:	*methanol*	CAS No.: 67-56-1
TSCA Inventory:	listed	California Proposition 65 List: listed, developmental
ACGIH:	200 ppm / 160 mg/m³	
Exposure Routes:	inhalation, skin absorption, ingestion, skin and/or eye contact	
Target Organs:	Eyes, skin, respiratory system, central nervous system, gastrointestinal tract	
Symptoms:	irritation eyes, skin, upper respiratory system; headache, drowsiness, dizziness, nausea, vomiting; visual disturbance, optic nerve damage (blindness	
Australia NICNAS:		Canada CEPA 1999: DSL yes
Japan CSCL/PRTR:	PAC yes, Japan PDSCL: Deleterious Substance	
Japan ISHL:	listed ≥0,3%/≥0,1%, Article 57-2 (SDS required)	
South Korea TCCA:	Accident Precaution Chemical yes	
Korea Exist.Chem.Inventory:	KE-23193, Toxic 97-1-80	
LD50 $_{orl\ rat}$:	5628 mg/kg	
LC_Low $_{ihl\ rat}$:	64,000 mg/L/4H	
LC_Low $_{orl\ hmn}$:	143 mg/kg	
LC50 $_{ihl\ rat}$:	>80 mg/L/4H	
LD50 $_{orl\ mus}$:	7300 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.
Chronic Effects: Causes damage to organs.
TRGS 905 (DE): R $_{F}$ C

Chemical: *mercury(II) thiocyanate* CAS No.: 592-85-8
TSCA Inventory: listed
Exposure Routes: inhalation, skin absorption, ingestion, skin and/or eye contact
Target Organs: Eyes, skin, respiratory system, central nervous system, kidneys
Symptoms: irritation eyes, skin; cough, chest pain, dyspnea (breathing difficulty), bronchitis, pneumonitis; tremor, insomnia, irritability, indecision, headac
Japan CSCL/PRTR: PRTR: ≥1,0%Hg class I, Japan PDSCL: Poisonous substance
Japan ISHL: listed ≥0,3%/≥0,1%
Korea Exist.Chem.Inventory: KE-05-0812, Toxic 97-1-140
LD50 orl rat : 46 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 damage to organs through prolonged or repeated exposure.
TRGS 907 (DE): Sh

20x 35 mg NANOFIX AOX 3 (R2)
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 ≥1,0%/≥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.
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.

5 mL Blank (NULL)
Chemical: *water* CAS No.: 7732-18-5
TSCA Inventory: listed
Korea Exist.Chem.Inventory: KE-35400
LD50 orl rat : > 90000 mg/kg

75 mL AOX (R4)
Chemical: *nitric acid* CAS No.: 7697-37-2
TSCA Inventory: listed California Proposition 65 List: not listed
Exposure Routes: inhalation, ingestion, skin and/or eye contact
Target Organs: Eyes, skin, respiratory system, teeth
Symptoms: irritation eyes, skin, mucous membrane; delayed pulmonary edema, pneumonitis, bronchitis; dental erosion
Australia NICNAS: not listed Canada CEPA 1999: DSL Yes
Japan CSCL/PRTR: not listed, Japan PDSCL: Deleterious Substance
Japan ISHL: listed ≥1,0%/≥1,0%, Article 57-2 (SDS required)
South Korea TCCA: Accident Precaution Chemical Yes
Korea Exist.Chem.Inventory: KE-25911, >10% Toxic 97-1-246, Acc. Precaution Chem.
LC_Low orl hmn : 1500 mg/kg/NOAEC
LC50 ihl rat : 2,65 mg/L/4H

TRGS 905 (DE): R F D

1 mL AOX 3 (R0)
Chemical: *nitric acid* CAS No.: 7697-37-2
TSCA Inventory: listed California Proposition 65 List: not listed
Exposure Routes: inhalation, ingestion, skin and/or eye contact
Target Organs: Eyes, skin, respiratory system, teeth
Symptoms: irritation eyes, skin, mucous membrane; delayed pulmonary edema, pneumonitis, bronchitis; dental erosion
Australia NICNAS: not listed Canada CEPA 1999: DSL Yes
Japan CSCL/PRTR: not listed, Japan PDSCL: Deleterious Substance
Japan ISHL: listed ≥1,0%/≥1,0%, Article 57-2 (SDS required)
South Korea TCCA: Accident Precaution Chemical Yes
Korea Exist.Chem.Inventory: KE-25911, >10% Toxic 97-1-246, Acc. Precaution Chem.
LC_Low orl hmn : 1500 mg/kg/NOAEC
LC50 ihl rat : 2,65 mg/L/4H
Acute Effects: Cause after skin contact, impairments of health when ingested in small quantities.

TRGS 905 (DE): R $_{F}$ D

105 mL AOX (R3)
Chemical: *sodium hydroxide solution* CAS No.: 1310-73-2
TSCA Inventory: listed California Proposition 65 List: not listed
Exposure Routes: inhalation, ingestion, skin and/or eye contact
Target Organs: Eyes, skin, respiratory system
Symptoms: -
Japan CSCL/PRTR: not listed, Japan PDSCL: not listed
Japan ISHL: listed ≥1,0%/≥1,0% SDS required
Korea Exist.Chem.Inventory: KE-31487
LD50 $_{orl\ rat}$: [< 1%] > 50000 mg/kg
LD50 $_{orl\ mus}$: [< 1%] > 4000 mg/kg

100 mL AOX (R1)
Chemical: *nitric acid* CAS No.: 7697-37-2
TSCA Inventory: listed California Proposition 65 List: not listed
Exposure Routes: inhalation, ingestion, skin and/or eye contact
Target Organs: Eyes, skin, respiratory system, teeth
Symptoms: irritation eyes, skin, mucous membrane; delayed pulmonary edema, pneumonitis, bronchitis; dental erosion
Australia NICNAS: not listed Canada CEPA 1999: DSL Yes
Japan CSCL/PRTR: not listed, Japan PDSCL: Deleterious Substance
Japan ISHL: listed ≥1,0%/≥1,0%, Article 57-2 (SDS required)
South Korea TCCA: Accident Precaution Chemical Yes
Korea Exist.Chem.Inventory: KE-25911, >10% Toxic 97-1-246, Acc. Precaution Chem.
LC_Low $_{orl\ hmn}$: 1500 mg/kg/NOAEC
LC50 $_{ihl\ rat}$: 2,65 mg/L/4H

TRGS 905 (DE): R $_{F}$ D

NANOSORB cartridge
Chemical: *NANOSORB cardridges* CAS No.: -
TSCA Inventory: not applicable

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.

11 mL Chloride 50/200 (Cl^- 2)
Chemical: *methanol* CAS No.: 67-56-1
Avoid contact of substance/mixture to environment.
PNEC $_{(fresh\ water)}$: 20.8 mg/Lno hazard identified
PNEC = Predicted No Effected Concentration
LC50 $_{daphnia\ magna/48h}$: [24h] 23.5 g/L
LC50 $_{pimephales\ promelas/96h}$: 29.4 g/L
LC50 $_{fish/96h}$: 15.4 g/L
EC50 $_{daphnia/48h}$: >10 g/L
IC50 $_{scenedesmus\ quadricauda/72h}$: [IC5 8d] 8000 mg/L
EC10 $_{pseudomonas\ putita/16h}$: [EC5] 6.6 g/L
Water hazard class (DE): 2 WGK No.: 0145
Dispersion coefficient $_{(o/w)}$: -0,77
Storage class (VCI): 3

Chemical: *mercury(II) thiocyanate* CAS No.: 592-85-8
May cause long lasting harmful effects to aquatic life. Avoid contact of substance/mixture to environment.
Environmental hazards must not be labelled with P phrases until 125 mL (EU 1272/2008 Annex I - 1.5.2).
Bio Toxicity: LC_{50} : 0.5 $_{HgCl2/48h}$ mg/L
Water hazard class (DE): 3 WGK No.: 0413
Storage class (VCI): 12

20x 35 mg NANOFIX AOX 3 (R2)
Chemical: *sodium peroxodisulfate* CAS No.: 7775-27-1
Water hazard class (DE): 1 WGK No.: 1352
Storage class (VCI): 5.1 B

5 mL Blank (NULL)
Chemical: *water* CAS No.: 7732-18-5

75 mL AOX (R4)
Chemical: *nitric acid* CAS No.: 7697-37-2
PNEC $_{(fresh\ water)}$: no hazard identified
PNEC = Predicted No Effected Concentration
$LC50_{\ daphnia\ magna/48h}$: 180 mg/L
$LC50_{\ fish/96h}$: [4d] 12 g/L
Water hazard class (DE): 1 WGK No.: 0414
Storage class (VCI): 8 B

1 mL AOX 3 (R0)
Chemical: *nitric acid* CAS No.: 7697-37-2
Avoid contact of substance/mixture to environment.
PNEC $_{(fresh\ water)}$: no hazard identified
PNEC = Predicted No Effected Concentration
$LC50_{\ daphnia\ magna/48h}$: 180 mg/L
$LC50_{\ fish/96h}$: [4d] 12 g/L
Water hazard class (DE): 1 WGK No.: 0414
Storage class (VCI): 8 B

105 mL AOX (R3)
Chemical: *sodium hydroxide solution* CAS No.: 1310-73-2
$LC50_{\ leuciscus\ idus/96h}$: 35-189 mg/L
$LC50_{\ fish/96h}$: 45.4 mg/L
$EC50_{\ daphnia/48h}$: >100 mg/L
Water hazard class (DE): nwg WGK No.: 0142
Storage class (VCI): 12-13

100 mL AOX (R1)
Chemical: *nitric acid* CAS No.: 7697-37-2
PNEC $_{(fresh\ water)}$: no hazard identified
PNEC = Predicted No Effected Concentration
$LC50_{\ daphnia\ magna/48h}$: 180 mg/L
$LC50_{\ fish/96h}$: [4d] 12 g/L
Water hazard class (DE): 1 WGK No.: 0414
Storage class (VCI): 8 B

NANOSORB cartridge
Chemical: *NANOSORB cardridges* CAS No.: -
Storage class (VCI): 13

12.2 Persistence and degradability
not necessary

12.3 Bioaccumulative potential
not necessary

12.4 Mobility in soil

not necessary

12.5 Results of PBT and vPvB assessment

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

12.6 Endocrine disrupting properties

no data available

12.7 Other adverse effects

no additional data available

SECTION 13: Disposal considerations

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

13.1 Waste treatment methods

Not necessary, see above.

SECTION 14: Transport information

14.1. UN number: 3316
14.2. UN proper shipping name: Chemical Kit
14.3. Class: 9 **14.4. Packing group: II**
Road transport ADR
Classification code: M11 Tunnel restriction code: E
Limited Quantity: acc. ADR 3.3.1/251: see LQ in Alternative declaration for transportation
Air transport ICAO
PAX: 960 max. weight PAX: 10 KG
CAO: 960 max. weight CAO: 10 KG
Maritime transport IMDG
EmS: F-A, S-P Storage category: A

Or use **Alternative declaration for transportation:**

14.1 UN number: 3264 **14.2 UN proper shipping name: Corrosive liquid, acidic, inorganic, n.o.s. (nitric acid solution)**
14.3 Class: 8 **14.4 Packing group: II**
Road transport ADR
Classification code: C1
Limited Quantity: 1 L Tunnel restriction code: E
Excepted Quantity: E 2
Air transport ICAO
Limited Quantity: LQ 22
Excepted Quantity: E 2
PAX: 851 max. weight PAX: 1 L
CAO: 855 max. weight CAO: 30 L
Maritime transport IMDG
EmS: F-A, S-B Storage category: B

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

H225	Highly flammable liquid and vapour.
H272	May intensify fire; oxidizer.
H290	May be corrosive to metals.
H301	Toxic if swallowed.
H302	Harmful if swallowed.
H311	Toxic in contact with skin.
H312	Harmful in contact with skin.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H331	Toxic if inhaled.
H332	Harmful if inhaled.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335	May cause respiratory irritation.
H370	Causes damage to organs.
H373	May cause damage to organs through prolonged or repeated exposure.
H413	May cause long lasting harmful effects to aquatic life.

16.2.2 List of relevant P phrases

P260sh	Do not breathe dust/vapours.
P280sh	Wear protective gloves/eye protection.
P301+310	IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
P303+361+353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
P305+351+338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P405	Store locked up.

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)

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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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 oxigen 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 spezified)
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:	intraperitonaeal
ISHL:	Industrial Safety and Health Law (Jp)
LC50:	letale concentration 50%
LD50:	letale dosis 50%
leuciscus idus:	fisch, ide, orfe
MAK:	maximum workplace concentration
Met:	Metall
mus:	mouse
Muta:	mutagen
NIOSH:	National Institute for Occupational Safety and Health (US)
NRD:	Non-rapidly degradable
onchorhynchus mykiss:	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 Effected Concentration
PROC 15:	Process category 'for laboratory use'
PRTR:	Law for PRTR and Promotion of Chemical Management (Jp)
PVC:	polyvinyl chloride
quail:	bird, quail
rat:	rat
rbt:	rabbit
RD:	rapidly degradable
RE:	repeated
REACh:	Registration, Evaluation, Authorisation and Restriction of Chemicals
REF:	item number, reference number
Reg.No.:	rRegistration number
Repr:	harmful to reproduction
Resp:	respiratory
RIP:	REACH Implementations Projects
scu:	sub cutan
SDS:	safety data sheet
Sens:	sensitisation
STEL:	short term exposure limit
STOT:	Specific Target Organ Toxicity
SVHC:	Substance of Very High Concern
t/a:	tons per year
TCCA:	Toxic Chemicals Control Act (S. Korea)
Tox:	toxic
TSCA:	The Toxic Substances Control Act (US)
TWA:	time weighted average
TRGS:	technical regulations (DE)
vPvB:	very persistent, very bioaccumulating substance

16.7 Training advice

Regular safety training. Multiple safety training of staffs about danger and protection by using hazards in working area. Additionally training and introduction of staffs for using these products.