

# Safety Data Sheet

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

REF: 985007

NANOCOLOR AOX 3

Page: 1/17

Printing date: 02.06.2020

Date of issue: 10.03.2020

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

### 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)  
2 x 100 mL AOX R1  
1 x 105 mL AOX R3  
1 x 75 mL AOX R4  
1 x 5 mL Blank (NULL)  
1 x 20x 35 mg NANOFIX AOX 3 (R2)  
2 x 11 mL Chloride 50/200 (Cl- 2)  
20 x NANOSORB cartridge

### 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](mailto:sds@mn-net.com) ([msds@mn-net.com](mailto: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

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



Signal word

DANGER

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| Hazard identification | Hazard classes/categories |
|-----------------------|---------------------------|
| H225                  | Flam. Liq. 2              |
| H272                  | Ox. Sol. 2                |
| H290                  | Met. Corr. 1              |
| H301                  | Acute Tox. 3 oral         |
| H302                  | Acute Tox. 4 oral         |
| H311                  | Acute Tox. 3 derm.        |
| H312                  | Acute Tox. 4 derm.        |
| H314                  | Skin Corr. 1A             |
| H315                  | Skin Irrit. 2             |
| H317                  | Skin Sens. 1              |
| H318                  | Eye Dam. 1                |
| H319                  | Eye Irrit. 2              |
| H331                  | Acute Tox. 3 inh.         |
| H332                  | Acute Tox. 4 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

### 1 mL AOX 3 (R0)



GHS05 GHS07

Signal word

DANGER

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

### 100 mL AOX R1

Signal word

Do not need labelling as hazardous

-

No hazard class

### 105 mL AOX R3



GHS07

Signal word

WARNING

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

### 75 mL AOX R4

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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)**

Signal word

Do not need labelling as hazardous

No hazard class

**20x 35 mg NANOFIX AOX 3 (R2)**



GHS03 GHS07 GHS08

Signal word

DANGER

**Hazard identification**

**Hazard classes/categories**

|      |                   |
|------|-------------------|
| 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         |

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



GHS02 GHS06 GHS07 GHS08

Signal word

DANGER

**Hazard identification**

**Hazard classes/categories**

|      |                    |
|------|--------------------|
| H225 | Flam. Liq. 2       |
| H301 | Acute Tox. 3 oral  |
| H302 | Acute Tox. 4 oral  |
| H311 | Acute Tox. 3 derm. |
| H312 | Acute Tox. 4 derm. |
| H331 | Acute Tox. 3 inh.  |
| H332 | Acute Tox. 4 inh.  |
| H370 | STOT SE 1          |
| H373 | STOT RE 2          |
| H413 | Aquatic Chronic 4  |

**NANOSORB cartridge**

Do not need labelling as hazardous

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Signal word -

No hazard class

## 2.2 Label elements

According **CLP directive** inner packages must be only labelled with GHS symbol(s) and product identifier(s) (EU 1272/2008 Annex I - 1.5.1.2). Inner packages up to 10 mL need max. 2 symbols (Annex I - 1.5.2.4.1 / 2).

Harmful chemicals/mixtures with signal word: **WARNING** 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 sensitizing 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).

### 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: -

### 105 mL AOX R3



GHS07

Signal word: WARNING

### 75 mL AOX R4



GHS05 GHS07

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

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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.

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



GHS02



GHS06



GHS07



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.

## NANOSORB cartridge

Do not need labelling as hazardous

Signal word: -

## 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 oral intake, 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

### Other hazards

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## SECTION 3: Composition/information on ingredients

### 3.1 Substances or 3.2 Mixtures

#### 1 mL AOX 3 (R0)

Chemical: *nitric acid* CAS No.: 7697-37-2  
 Classification: H272, Ox. Liq. 2, H290, Met. Corr. 1, H314, Skin Corr. 1B, H331, Acute Tox. 3 inh.  
 Formula:  $\text{HNO}_3 \cdot \text{H}_2\text{O}$   
 Pseudonym: Aqua fortis, Engravers acid, hydrogen nitrate  
 TSCA Inventory: listed  
 REACH Reg. No.: 01-2119487297-23-xxxx  
 EC No.: 231-714-2 Indice No.: 007-004-00-1  
 RTECS: QU5900000/QU5775000  
 KE No.: KE-25911, >10% Toxic 97-1-246, Acc. Precaution Chem.  
 Concentration: 13 - <20 %  
 acc. CLP (GHS): H290, Met. Corr. 1, H314, Skin Corr. 1B, H332, Acute Tox. 4 inh.

#### 100 mL AOX R1

Chemical: *nitric acid* CAS No.: 7697-37-2  
 Classification: H272, Ox. Liq. 2, H290, Met. Corr. 1, H314, Skin Corr. 1B, H331, Acute Tox. 3 inh.  
 Formula:  $\text{HNO}_3 \cdot \text{H}_2\text{O}$   
 Pseudonym: Aqua fortis, Engravers acid, hydrogen nitrate  
 TSCA Inventory: listed  
 REACH Reg. No.: 01-2119487297-23-xxxx  
 EC No.: 231-714-2 Indice No.: 007-004-00-1  
 RTECS: QU5900000/QU5775000  
 KE No.: KE-25911, >10% Toxic 97-1-246, Acc. Precaution Chem.  
 Concentration: 0.1 - <1 %  
 acc. CLP (GHS): The criteria for classification are not fulfilled.

#### 105 mL AOX R3

Chemical: *sodium hydroxide solution (diluted < 2 %)* CAS No.: 1310-73-2d  
 Classification: H314, Skin Corr. 1B  
 Formula:  $\text{NaOH} \cdot \text{H}_2\text{O}$   
 Pseudonym: diluted soda lye  
 TSCA Inventory: listed  
 REACH Reg. No.: 01-2119457892-27-xxxx  
 EC No.: 215-185-5 Indice No.: 011-002-00-6  
 RTECS: WB4900000  
 KE No.: KE-31487  
 Concentration: 1 - <2 %  
 acc. CLP (GHS): H315, Skin Irrit. 2, H319, Eye Irrit. 2

#### 75 mL AOX R4

Chemical: *nitric acid* CAS No.: 7697-37-2  
 Classification: H272, Ox. Liq. 2, H290, Met. Corr. 1, H314, Skin Corr. 1B, H331, Acute Tox. 3 inh.  
 Formula:  $\text{HNO}_3 \cdot \text{H}_2\text{O}$   
 Pseudonym: Aqua fortis, Engravers acid, hydrogen nitrate  
 TSCA Inventory: listed  
 REACH Reg. No.: 01-2119487297-23-xxxx  
 EC No.: 231-714-2 Indice No.: 007-004-00-1  
 RTECS: QU5900000/QU5775000  
 KE No.: KE-25911, >10% Toxic 97-1-246, Acc. Precaution Chem.  
 Concentration: 3 - <5 %  
 acc. CLP (GHS): H290, Met. Corr. 1, H315, Skin Irrit. 2, H318, Eye Dam. 1

#### 5 mL Blank (NULL)

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Chemical: *water* CAS No.: 7732-18-5  
 Classification: No criteria for classification or naming of chemical not required.  
 Formula: H<sub>2</sub>O  
 TSCA Inventory: listed  
 REACH Reg. No.: exempt, Annex IV  
 EC No.: 231-791-2  
 RTECS: ZC0110000  
 KE No.: KE-35400  
 Concentration: 90 - <100 %  
 acc. CLP (GHS): The criteria for classification are not fulfilled.

## 20x 35 mg NANOFIX AOX 3 (R2)

Chemical: *sodium peroxodisulfate* CAS No.: 7775-27-1  
 Classification: 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  
 Formula: Na<sub>2</sub>O<sub>8</sub>S<sub>2</sub>  
 Pseudonym: sodium persulfate  
 TSCA Inventory: listed  
 REACH Reg. No.: 01-2119495975-15-xxxx  
 EC No.: 231-892-1  
 RTECS: SE0525000  
 KE No.: KE-12369  
 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

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

Chemical: *mercury(II) thiocyanate* CAS No.: 592-85-8  
 Classification: 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)<sub>2</sub>  
 TSCA Inventory: listed  
 EC No.: 209-773-0 Indice No.: 080-004-00-7  
 RTECS: XL1550000  
 KE No.: KE-05-0812, Toxic 97-1-140  
 Concentration: 0.32 - <0.64 % Correlation factor: x 0.78 (= %Hg)  
 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): H302, Acute Tox. 4 oral, H312, Acute Tox. 4 derm., H332, Acute Tox. 4 inh., H373, STOT RE 2, H413, Aquatic Chronic 4

Chemical: *methanol* CAS No.: 67-56-1  
 Classification: 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<sub>4</sub>O, CH<sub>3</sub>OH  
 TSCA Inventory: listed  
 REACH Reg. No.: 01-2119433307-44-xxxx  
 EC No.: 200-659-6 Indice No.: 603-001-00-X  
 RTECS: PC1400000 MFCD: 00004595  
 KE No.: KE-23193, Toxic 97-1-80  
 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

## NANOSORB cartridge

Chemical: *NANOSORB cartridges* CAS No.: -  
 Classification: No criteria for classification or naming of chemical not required.  
 TSCA Inventory: not applicable  
 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 16.1

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## 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

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. Causes damage to organs. ---

### 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 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 DISTRESS ensure that the patient inhales oxygen. **TOXIFICATION:** Treat symptomatically. Secure the breathing, heart and circulatory function. Remove the substance quickly from the body. Mechanically induce vomiting or ensure the patient eats medicinal charcoal compressed tablets or drinks aluminium oxide drug suspensions. In order to ensure rapid passage through the colon (administer 2 tablespoons of dissolved Glauber's salt). Alleviation of pain, if necessary sedation. Shock treatment. Administer a prophylaxis to counter pulmonary oedema. Inform patient respectively further measures and the possibility of long-term damages. ---

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

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

**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.



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## 6.2 Environmental precautions

not necessary

## 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 ---

## 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

The original product package of MACHEREY-NAGEL allows a safe storage. Products containing also toxic substances should be kept locked up.

|                          |   |
|--------------------------|---|
| 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

#### 1 mL AOX 3 (R0)

Chemical: *nitric acid* CAS No.: 7697-37-2

DNEL: [inh] (1.3) mg/m<sup>3</sup>  
DNEL = Derived No-Effect Level (for workers)

PNEC<sub>(fresh water)</sub>: no hazard identified  
PNEC = Predicted No Effect Concentration

EU value: 1 ppm / 2.6 mg/m<sup>3</sup>

TRGS 900 (DE): 1 ppm / 2,6 mg/m<sup>3</sup>  
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/m<sup>3</sup>

NIOSH: [TWA] 2 ppm / 5 mg/m<sup>3</sup>

NIOSH STEL: 4 ppm / 10 mg/m<sup>3</sup>

[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/m<sup>3</sup>

#### 100 mL AOX R1

Chemical: *nitric acid* CAS No.: 7697-37-2

DNEL: [inh] (1.3) mg/m<sup>3</sup>  
DNEL = Derived No-Effect Level (for workers)

PNEC<sub>(fresh water)</sub>: no hazard identified  
PNEC = Predicted No Effect Concentration

EU value: 1 ppm / 2.6 mg/m<sup>3</sup>

TRGS 900 (DE): 1 ppm / 2,6 mg/m<sup>3</sup>  
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/m<sup>3</sup>

NIOSH: [TWA] 2 ppm / 5 mg/m<sup>3</sup>

NIOSH STEL: 4 ppm / 10 mg/m<sup>3</sup>

[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/m<sup>3</sup>

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mg/m<sup>3</sup>

**105 mL AOX R3**

Chemical: *sodium hydroxide solution* CAS No.: 1310-73-2d

**75 mL AOX R4**

Chemical: *nitric acid* CAS No.: 7697-37-2

DNEL: [inh] (1.3) mg/m<sup>3</sup>  
DNEL = Derived No-Effect Level (for workers)

PNEC<sub>(fresh water)</sub>: no hazard identified  
PNEC = Predicted No Effect Concentration

EU value: 1 ppm / 2.6 mg/m<sup>3</sup>

TRGS 900 (DE): 1 ppm / 2,6 mg/m<sup>3</sup>  
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/m<sup>3</sup>

NIOSH: [TWA] 2 ppm / 5 mg/m<sup>3</sup>

NIOSH STEL: 4 ppm / 10 mg/m<sup>3</sup>

[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/m<sup>3</sup>

**5 mL Blank (NULL)**

Chemical: *water* CAS No.: 7732-18-5

**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

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

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

EU value: [Hg] 0.02 e mg/m<sup>3</sup>

TRGS 900 (DE): 0,02Hg E mg/m<sup>3</sup>  
E/e respirable

Short-term exposure factor: 8 (I), 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/m<sup>3</sup>

SUVA(CH) BAT value: [Krea U/d] 35 µg/L

TRGS 903 (DE): [U/aKreatinin] 25 µg/g  
B blood, U urine, a no limitation, b end of exposition or shift

NIOSH: [Hg vapor: TWA<sub>skin</sub>] 0.05; other 0.1 mg/m<sup>3</sup>

[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/m<sup>3</sup>

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

DNEL: [derm] 40 mg/kg bw/day; [inh] 260 mg/m<sup>3</sup>  
DNEL = Derived No-Effect Level (for workers)

PNEC<sub>(fresh water)</sub>: 20.8 mg/L no hazard identified  
PNEC = Predicted No Effect Concentration

EU value: [TWA] 200 ppm / 260 mg/m<sup>3</sup>

TRGS 900 (DE): 200 ppm / 270 mg/m<sup>3</sup>  
E/e respirable

Short-term exposure factor: 4 (I), 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/m<sup>3</sup>

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/m<sup>3</sup>

NIOSH STEL: 250 ppm / 325 mg/m<sup>3</sup>

[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/m<sup>3</sup>



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**NANOSORB cartridge**

Chemical: *NANOSORB cartridges*

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 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 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.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

**1 mL AOX 3 (R0)**

Appearance: liquid

pH:

Specific gravity:

Colour: slightly grey

0-1

1,11 g/cm<sup>3</sup>

Odor: nitric

**100 mL AOX R1**

Appearance: liquid

pH:

Solubility in water:

Colour: colourless

0-1

0-100 %

Odor: odorless

**105 mL AOX R3**

Appearance: liquid

pH:

Solubility in water:

Colour: colourless

13-14

0-100 %

Odor: odorless

**75 mL AOX R4**

Appearance: liquid

pH:

Solubility in water:

Colour: colourless

0-1

0-100 %

Odor: nitric

**5 mL Blank (NULL)**

Appearance: liquid

pH:

Specific gravity:

Colour: colourless

6-8

1,00 g/cm<sup>3</sup>

Odor: odorless

**20x 35 mg NANOFIX AOX 3 (R2)**

Appearance: solid (lyoph.)

pH:

Solubility in water:

Colour: colourless

5-7

0-100 %

Odor: odorless

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

Appearance: liquid

Flash point:

Colour: colourless

11 °C

Odor: alcoholic

**NANOSORB cartridge**

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Appearance: solid  
pH:Colour: brown  
6-8

Odor: fusty, mouldy

## 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

Substances are very volatile and form flammable vapour-air mixtures. ---

## 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: Contact with acids liberates toxic gas. No further data available.

### 10.4 Conditions to avoid

Not necessary. Observe labeled storage temperature. ---

### 10.5 Incompatible materials

Avoid contact with strong acids or alkalines.

### 10.6 Hazardous decomposition products

In the original package all parts/all reagents are safety and separated stored. Decompositions are not observed during the expiration period under recommended conditions.

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

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

#### 1 mL AOX 3 (R0)

|                             |  |  |
|-----------------------------|--|--|
| Chemical:                   | <i>nitric acid</i>   | 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 $\geq 1,0\%$ / $\geq 1,0\%$ , 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 <sub>LoWorl hmn</sub> :  | [NOAEC] 1500 mg/kg   |  |
| LC50 <sub>ihl rat</sub> :   | [4h] 2.65 mg/L   |  |
| Acute Effects:              | Cause after skin contact, impairments of health when ingested in small quantities.                       |  |
| TRGS 905 (DE):              | R <sub>F</sub> D   |  |

#### 100 mL AOX R1

|                             |  |  |
|-----------------------------|--|--|
| Chemical:                   | <i>nitric acid</i>   | 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 $\geq 1,0\%$ / $\geq 1,0\%$ , 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 <sub>LoWorl hmn</sub> :  | [NOAEC] 1500 mg/kg   |  |
| LC50 <sub>ihl rat</sub> :   | [4h] 2.65 mg/L   |  |
| TRGS 905 (DE):              | R <sub>F</sub> D   |  |

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## 105 mL AOX R3

Chemical: *sodium hydroxide solution* CAS No.: 1310-73-2d  
 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  $\geq 1,0\%$ / $\geq 1,0\%$  SDS required  
 Korea Exist.Chem.Inventory: KE-31487  
 LD50<sub>orl rat</sub>: [ $< 1\%$ ]  $> 50$  g/kg  
 LD50<sub>orl mus</sub>: [ $< 1\%$ ]  $> 4$  g/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  $\geq 1,0\%$ / $\geq 1,0\%$ , 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<sub>LoWorl hmn</sub>: [NOAEC] 1500 mg/kg  
 LC50<sub>ihl rat</sub>: [4h] 2.65 mg/L  
 TRGS 905 (DE): R<sub>F</sub> D

## 5 mL Blank (NULL)

Chemical: *water* CAS No.: 7732-18-5  
 TSCA Inventory: listed  
 Korea Exist.Chem.Inventory: KE-35400

## 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  $\geq 1,0\%$ / $\geq 0,1\%$ , Article 57-2 (SDS required)  
 South Korea TCCA: not listed  
 Korea Exist.Chem.Inventory: KE-12369  
 LD50<sub>orl rat</sub>: 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.

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

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, headache  
 Japan CSCL/PRTR: PRTR:  $\geq 1,0\%$ Hg class I, Japan PDSCL: Poisonous substance  
 Japan ISHL: listed  $\geq 0,3\%$ / $\geq 0,1\%$   
 Korea Exist.Chem.Inventory: KE-05-0812, Toxic 97-1-140  
 LD50<sub>orl rat</sub>: 46 mg/kg  
 LD50<sub>drm rbt</sub>: 685 mg/kg  
 Acute Effects: Cause after oral intake, inhalation of vapours/dust, skin contact, impairments of health when ingested in small

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quantities.

Chronic Effects: May cause damage to organs through prolonged or repeated exposure.

TRGS 907 (DE): Sh

Chemical: *methanol*

CAS No.: 67-56-1

TSCA Inventory: listed California Proposition 65 List: listed, developmental

ACGIH: 200 ppm / 160 mg/m<sup>3</sup>

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<sub>orl rat</sub>: 5628 mg/kg

LC<sub>LoWihl rat</sub>: [4h] 64000 mg/m<sup>3</sup>

LC<sub>LoWorl hmn</sub>: 143 mg/kg

LC50<sub>ihl rat</sub>: [4h] >80 mg/L

LD50<sub>drm rbt</sub>: 15800 mg/kg

LD50<sub>orl mus</sub>: 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<sub>F</sub> C

## NANOSORB cartridge

Chemical: *NANOSORB cartridges*

CAS No.: -

TSCA Inventory: not applicable

## SECTION 12: Ecological information

### 12.1 Toxicity

Following information is valid for pure substances.

#### 1 mL AOX 3 (R0)

Chemical: *nitric acid*

CAS No.: 7697-37-2

Avoid contact of substance/mixture to environment.

PNEC<sub>(fresh water)</sub>: no hazard identified

PNEC = Predicted No Effect Concentration

LC50<sub>daphnia magna/48h</sub>: 180 mg/L

LC50<sub>fish/96h</sub>: [4d] 12 g/L

Water hazard class (DE): 1 WGK No.: 0414

Storage class (VCI): 8 B

#### 100 mL AOX R1

Chemical: *nitric acid*

CAS No.: 7697-37-2

PNEC<sub>(fresh water)</sub>: no hazard identified

PNEC = Predicted No Effect Concentration

LC50<sub>daphnia magna/48h</sub>: 180 mg/L

LC50<sub>fish/96h</sub>: [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.: 1310-73-2d

LC50<sub>leuciscus idus/96h</sub>: 35-189 mg/L

LC50<sub>fish/96h</sub>: 45.4 mg/L

EC50<sub>daphnia/48h</sub>: >100 mg/L

Water hazard class (DE): nwg WGK No.: 0142

Storage class (VCI): 12-13



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## 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

Classification code: M11 Tunnel restriction code: E  
 Limited Quantity: acc. ADR 3.3.1/251: see LQ in Alternative declaration for transportation

### Air transport

PAX: 960 max. weight PAX: 10 KG  
 CAO: 960 max. weight CAO: 10 KG

### Maritime transport

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

Classification code: C1 Tunnel restriction code: E  
 Limited Quantity: 1 L  
 Excepted Quantity: E 2

### Air transport

PAX: 851 max. weight PAX: 1 L  
 CAO: 855 max. weight CAO: 30 L

### Maritime transport

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 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  
 TRGS 200, German engineering rules governing the classification and labelling of hazardous substances, preparations and products, updated October 2011  
 MN Leaflet/User manual, also see [www.mn-net.com](http://www.mn-net.com)  
 Look for your country-specific regulations.

### 15.2 Chemical safety assessment

not necessary for these small amounts ---

## SECTION 16: Other information

### 16.1 List of H and P phrases

#### 16.1.1 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. |



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|      |  |
|------|--|
| 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.                    |

**16.1.2 List of relevant P phrases**

|              |  |
|--------------|--|
| P210         | Keep away from heat/sparks/open flames/hot surfaces. No smoking.   |
| P233         | Keep container tightly closed.   |
| P260sh       | Do not breathe dust/vapours.   |
| P261sh       | Avoid breathing dust/vapours.  |
| P264W        | Wash with water thoroughly after handling.   |
| P273         | Avoid release to the environment.  |
| P280sh       | Wear protective gloves/eye protection.   |
| P301+310     | IF SWALLOWED: Immediately call a POISON CENTER/ doctor.  |
| P301+312     | IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.  |
| P302+352     | IF ON SKIN: Wash with plenty of water.   |
| P303+361+353 | IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].                         |
| P304+340     | IF INHALED: Remove person to fresh air and keep comfortable for breathing.   |
| P305+351+338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| P310         | Immediately call a POISON CENTER/doctor.   |
| P311         | Call a POISON CENTER/doctor.   |
| P312         | Call a POISON CENTER/doctor if you feel unwell.  |
| P330         | Rinse mouth.   |
| P342+311     | If experiencing respiratory symptoms: Call a POISON CENTER/doctor.   |
| P390         | Absorb spillage to prevent material damage.  |
| P403+233     | Store in a well-ventilated place. Keep container tightly closed.   |
| P405         | Store locked up.   |

**16.2 Training advice**

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.

**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 Further information**

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**16.5 Sources of key data**

- Regulation 453/2010/EU REACH - REQUIREMENTS FOR THE COMPILATION OF SAFETY DATA SHEETS
- Regulation 487/2013/EU, 4<sup>th</sup> adaptation of CLP regulation to technical and scientific progress
- Regulation 669/2018/EU, 4<sup>th</sup> adaptation of CLP regulation to technical and scientific progress
- Regulation 1480/2018/EU, 4<sup>th</sup> adaptation of CLP regulation to technical and scientific progress
- TRGS 900, German engineering rules governing limits in air at work, updated 03/2019
- SUVA .CH, Limits in air at work 2009, revised on 01.2009
- Directive 2004/37/EC on the protection of workers from the risks related to exposure to carcinogens or mutagens at work
- TRGS 905, German engineering rules governing carcinogens and mutagens, updated 03/18
- TRGS 907, German engineering rules governing listing of substances and causes of sensitizations, updated November 2011
- KÜHN, BIRETT Merkleblätter Gefährliche Arbeitsstoffe (Data Sheets of Hazardous Substances)

**Revisions/Updates**

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

