

**SAFETY DATA SHEET**

according to Regulation (EC) No. 1907/2006

Revision Date 12.09.2018

Version 13.1

**SECTION 1. Identification of the substance/mixture and of the company/undertaking****1.1 Product identifier**

Catalogue No.	100677
Product name	AOX Sample Preparation Set 25 Tests Spectroquant®
	AOX-2
REACH Registration Number	01-2119457610-43-XXXX
CAS-No.	64-17-5

**1.2 Relevant identified uses of the substance or mixture and uses advised against**

Identified uses	Reagent for analysis For additional information on uses please refer to the Merck Chemicals portal ( <a href="http://www.merckgroup.com">www.merckgroup.com</a> ).
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**1.3 Details of the supplier of the safety data sheet**

Company	Merck KGaA * 64271 Darmstadt * Germany * Phone:+49 6151 72-0
Responsible Department	LS-QHC * e-mail: <a href="mailto:prodsafe@merckgroup.com">prodsafe@merckgroup.com</a>

<b>1.4 Emergency telephone number</b>	<b>Please contact the regional company representation in your country.</b>
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**SECTION 2. Hazards identification****2.1 Classification of the substance or mixture****Classification (REGULATION (EC) No 1272/2008)**

Flammable liquid, Category 2, H225

Eye irritation, Category 2, H319

For the full text of the H-Statements mentioned in this Section, see Section 16.

**2.2 Label elements****Labelling.(REGULATION (EC) No 1272/2008)***Hazard pictograms*

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## *Signal word*

Danger

## *Hazard statements*

H225 Highly flammable liquid and vapour.

H319 Causes serious eye irritation.

## *Precautionary statements*

### Prevention

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P240 Ground/bond container and receiving equipment.

### Response

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

### Storage

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

## **Reduced labelling (≤125 ml)**

### *Hazard pictograms*



### *Signal word*

Danger

### *Precautionary statements*

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Contains: ethanol

*Index-No.* 603-002-00-5

## **2.3 Other hazards**

None known.

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## SECTION 3. Composition/information on ingredients

### 3.1 Substance

Formula	C <sub>2</sub> H <sub>5</sub> OH	C <sub>2</sub> H <sub>6</sub> O (Hill)
Index-No.	603-002-00-5	
EC-No.	200-578-6	
Molar mass	46,07 g/mol	

### Hazardous components (REGULATION (EC) No 1272/2008)

*Chemical name (Concentration)*

CAS-No.	Registration number	Classification
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ethanol (<= 100 % )

*Substance does not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, Annex XIII.*

64-17-5	01-2119457610-43-	
	XXXX	Flammable liquid, Category 2, H225 Eye irritation, Category 2, H319

For the full text of the H-Statements mentioned in this Section, see Section 16.

### 3.2 Mixture

Not applicable

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## SECTION 4. First aid measures

### 4.1 Description of first aid measures

After inhalation: fresh air.

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/shower.

After eye contact: rinse out with plenty of water. Call in ophthalmologist. Remove contact lenses.

After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

### 4.2 Most important symptoms and effects, both acute and delayed

irritant effects, respiratory paralysis, Dizziness, narcosis, inebriation, euphoria, Nausea, Vomiting

### 4.3 Indication of any immediate medical attention and special treatment needed

No information available.

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## SECTION 5. Firefighting measures

### 5.1 Extinguishing media

#### *Suitable extinguishing media*

Carbon dioxide (CO<sub>2</sub>), Foam, Dry powder, Water

#### *Unsuitable extinguishing media*

For this substance/mixture no limitations of extinguishing agents are given.

### 5.2 Special hazards arising from the substance or mixture

Combustible.

Pay attention to flashback.

Forms explosive mixtures with air at ambient temperatures.

Vapours are heavier than air and may spread along floors.

Development of hazardous combustion gases or vapours possible in the event of fire.

### 5.3 Advice for firefighters

#### *Special protective equipment for firefighters*

In the event of fire, wear self-contained breathing apparatus.

#### *Further information*

Remove container from danger zone and cool with water. Prevent fire extinguishing water from contaminating surface water or the ground water system.

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## SECTION 6. Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Do not breathe vapours, aerosols. Avoid substance contact. Ensure adequate ventilation. Keep away from heat and sources of ignition. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders:

Protective equipment see section 8.

### 6.2 Environmental precautions

Do not let product enter drains. Risk of explosion.

### 6.3 Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up with liquid-absorbent material (e.g. Chemisorb®). Dispose of properly. Clean up affected area.

### 6.4 Reference to other sections

Indications about waste treatment see section 13.

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## SECTION 7. Handling and storage

### 7.1 Precautions for safe handling

#### *Advice on safe handling*

Observe label precautions.

#### *Advice on protection against fire and explosion*

Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.

#### *Hygiene measures*

Change contaminated clothing. Wash hands after working with substance.

### 7.2 Conditions for safe storage, including any incompatibilities

#### *Storage conditions*

Tightly closed. Dry. Keep in a well-ventilated place. Keep locked up or in an area accessible only to qualified or authorised persons. Do not store near combustible materials.

Recommended storage temperature see product label.

The data applies to the entire pack.

### 7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

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## SECTION 8. Exposure controls/personal protection

### 8.1 Control parameters

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## Derived No Effect Level (DNEL)

Worker DNEL, acute	Local effects	inhalation	1900 mg/m <sup>3</sup>
Worker DNEL, longterm	Systemic effects	dermal	343 mg/kg Body weight
Worker DNEL, longterm	Systemic effects	inhalation	950 mg/m <sup>3</sup>
Consumer DNEL, acute	Local effects	inhalation	950 mg/m <sup>3</sup>
Consumer DNEL, longterm	Systemic effects	dermal	206 mg/kg Body weight
Consumer DNEL, longterm	Systemic effects	inhalation	114 mg/m <sup>3</sup>
Consumer DNEL, longterm	Systemic effects	oral	87 mg/kg Body weight

## Predicted No Effect Concentration (PNEC)

PNEC Fresh water	0,96 mg/l
PNEC Marine water	0,79 mg/l
PNEC Fresh water sediment	3,6 mg/kg
PNEC Soil	0,63 mg/kg
PNEC Aquatic intermittent release	2,75 mg/l
PNEC Sewage treatment plant	580 mg/l
PNEC oral	720 mg/kg

## 8.2 Exposure controls

### Engineering measures

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

See section 7.1.

### Individual protection measures

Protective clothing needs to be selected specifically for the workplace, depending on concentrations and quantities of the hazardous substances handled. The chemical resistance of the protective equipment should be enquired at the respective supplier.

#### *Eye/face protection*

Safety glasses

#### *Hand protection*

full contact:

Glove material:	butyl-rubber
Glove thickness:	0,7 mm
Break through time:	> 480 min

splash contact:

Glove material:	Nitrile rubber
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Glove thickness: 0,40 mm  
Break through time: > 120 min

The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374, for example KCL 898 Butoject® (full contact), KCL 730 Camatril® -Velours (splash contact).

The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types.

This recommendation applies only to the product stated in the safety data sheet(>,<)> supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

#### *Other protective equipment*

Flame retardant antistatic protective clothing.

#### *Respiratory protection*

required when vapours/aerosols are generated.

Recommended Filter type: Filter A (acc. to DIN 3181) for vapours of organic compounds

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

#### **Environmental exposure controls**

Do not let product enter drains.

Risk of explosion.

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## **SECTION 9. Physical and chemical properties**

### **9.1 Information on basic physical and chemical properties**

Form	liquid
Colour	colourless
Odour	alcohol-like
Odour Threshold	0,1 - 5058,5 ppm
pH	7,0 at 10 g/l 20 °C
Melting point	-114,5 °C
Boiling point/boiling range	78,3 °C at 1.013 hPa
Flash point	12 °C Method: c.c.

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Evaporation rate	No information available.
Flammability (solid, gas)	No information available.
Lower explosion limit	3,1 %(V)
Upper explosion limit	27,7 %(V)
Vapour pressure	59 hPa at 20 °C
Relative vapour density	1,6
Density	0,790 - 0,793 g/cm <sup>3</sup> at 20 °C
Relative density	No information available.
Water solubility	at 20 °C completely miscible
Partition coefficient: n-octanol/water	log Pow: -0,31 (experimental) (Lit.) Bioaccumulation is not expected.
Auto-ignition temperature	No information available.
Decomposition temperature	No information available.
Viscosity, dynamic	1,2 mPa.s at 20 °C
Explosive properties	Not classified as explosive.
Oxidizing properties	none

## 9.2 Other data

Ignition temperature	425 °C Method: DIN 51794
Conductivity	< 1 µS/cm

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## SECTION 10. Stability and reactivity

### 10.1 Reactivity

Vapours may form explosive mixture with air.

### 10.2 Chemical stability



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The product is chemically stable under standard ambient conditions (room temperature) .

## 10.3 Possibility of hazardous reactions

Risk of explosion/exothermic reaction with:

hydrogen peroxide, perchlorates, perchloric acid, Nitric acid, mercury(II) nitrate, permanganic acid, Nitriles, peroxy compounds, Strong oxidizing agents, nitrosyl compounds, Peroxides, sodium, Potassium, halogen oxides, calcium hypochlorite, nitrogen dioxide, metallic oxides, uranium hexafluoride, iodides, Chlorine, Alkali metals, Alkaline earth metals, alkali oxides, Ethylene oxide silver, with, Nitric acid

silver compounds, with, Ammonia

potassium permanganate, with, conc. sulfuric acid

Risk of ignition or formation of inflammable gases or vapours with:

halogen-halogen compounds, chromium(VI) oxide, chromyl chloride, Fluorine, hydrides, Oxides of phosphorus, platinum

Nitric acid, with, potassium permanganate

## 10.4 Conditions to avoid

Warming.

## 10.5 Incompatible materials

rubber, various plastics

## 10.6 Hazardous decomposition products

no information available

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## SECTION 11. Toxicological information

### 11.1 Information on toxicological effects

#### *Acute oral toxicity*

LD50 Rat: 10.470 mg/kg

OECD Test Guideline 401

Symptoms: Nausea, Vomiting

#### *Acute inhalation toxicity*

LC50 Rat: 124,7 mg/l; 4 h ; vapour

OECD Test Guideline 403

absorption

Symptoms: slight mucosal irritations

#### *Acute dermal toxicity*

This information is not available.

#### *Skin irritation*

Rabbit

Result: No skin irritation

OECD Test Guideline 404

Repeated or prolonged exposure may cause skin irritation and dermatitis, due to degreasing properties of the product.

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## *Eye irritation*

Rabbit

Result: Eye irritation

OECD Test Guideline 405

Causes serious eye irritation.

## *Sensitisation*

Local lymph node assay (LLNA) Mouse

Result: negative

Method: OECD Test Guideline 429

## *Germ cell mutagenicity*

### *Genotoxicity in vitro*

Ames test

Salmonella typhimurium

Result: negative

Method: OECD Test Guideline 471

In vitro mammalian cell gene mutation test

Mouse lymphoma test

Result: negative

Method: OECD Test Guideline 476

## *Carcinogenicity*

This information is not available.

## *Reproductive toxicity*

Application Route: Oral

Mouse

Method: OECD Test Guideline 416

## *Teratogenicity*

This information is not available.

## *Specific target organ toxicity - single exposure*

This information is not available.

## *Specific target organ toxicity - repeated exposure*

This information is not available.

## *Aspiration hazard*

This information is not available.

## 11.2 Further information

Systemic effects:

euphoria

After absorption:

Dizziness, inebriation, narcosis, respiratory paralysis

Other dangerous properties can not be excluded.

Handle in accordance with good industrial hygiene and safety practice.

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## SECTION 12. Ecological information

### 12.1 Toxicity

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The Safety Data Sheets for catalogue items are available at [www.merckgroup.com](http://www.merckgroup.com)

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### *Toxicity to fish*

flow-through test EC50 Pimephales promelas (fathead minnow): 15.300 mg/l; 96 h

Analytical monitoring: yes

US-EPA

### *Toxicity to daphnia and other aquatic invertebrates*

EC50 Daphnia magna (Water flea): 9.268 - 14.221 mg/l; 48 h (IUCLID)

### *Toxicity to algae*

IC5 Scenedesmus quadricauda (Green algae): 5.000 mg/l; 7 d (Lit.)

### *Toxicity to bacteria*

EC5 Pseudomonas putida: 6.500 mg/l; 16 h (IUCLID)

### *Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)*

semi-static test NOEC Daphnia magna (Water flea): 9,6 mg/l; 9 d  
(ECHA)

## 12.2 Persistence and degradability

### *Biodegradability*

94 %

OECD Test Guideline 301E

Readily biodegradable

### *Biochemical Oxygen Demand (BOD)*

930 - 1.670 mg/g (5 d)

(Lit.)

### *Theoretical oxygen demand (ThOD)*

2.100 mg/g

(Lit.)

### *Ratio COD/ThBOD*

90 %

(Lit.)

## 12.3 Bioaccumulative potential

### *Partition coefficient: n-octanol/water*

log Pow: -0,31

(experimental)

(Lit.) Bioaccumulation is not expected.

## 12.4 Mobility in soil

No information available.

## 12.5 Results of PBT and vPvB assessment

Substance does not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, Annex XIII.

## 12.6 Other adverse effects

### *Additional ecological information*

No interference with wastewater treatment plants are to be expected when used properly.

Discharge into the environment must be avoided.

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## SECTION 13. Disposal considerations

### *Waste treatment methods*

See [www.retrologistik.com](http://www.retrologistik.com) for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

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## SECTION 14. Transport information

### Land transport (ADR/RID)

14.1 UN number UN 3316  
14.2 Proper shipping name CHEMICAL KIT  
14.3 Class 9  
14.4 Packing group II  
14.5 Environmentally hazardous --  
14.6 Special precautions for user yes  
Tunnel restriction code E

### Inland waterway transport (ADN)

Not relevant

### Air transport (IATA)

14.1 UN number UN 3316  
14.2 Proper shipping name CHEMICAL KIT  
14.3 Class 9  
14.4 Packing group II  
14.5 Environmentally hazardous --  
14.6 Special precautions for user no

### Sea transport (IMDG)

14.1 UN number UN 3316  
14.2 Proper shipping name CHEMICAL KIT  
14.3 Class 9  
14.4 Packing group II  
14.5 Environmentally hazardous --  
14.6 Special precautions for user yes  
EmS F-A S-P

### 14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not relevant

THIS TRANSPORT DATA APPLIES TO THE ENTIRE PACK!

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## SECTION 15. Regulatory information

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

#### *EU regulations*

Major Accident Hazard 96/82/EC  
Legislation Highly flammable  
7b  
Quantity 1: 5.000 t  
Quantity 2: 50.000 t

SEVESO III  
FLAMMABLE LIQUIDS  
P5c  
Quantity 1: 5.000 t  
Quantity 2: 50.000 t

Occupational restrictions Take note of Dir 94/33/EC on the protection of young people at work.

Regulation (EC) No 1005/2009 on substances that deplete the ozone layer not regulated

Regulation (EC) No 850/2004 of the European Parliament and of the Council of 29 April 2004 on persistent organic pollutants and amending Directive 79/117/EEC not regulated

Substances of very high concern (SVHC) This product does not contain substances of very high concern according to Regulation (EC) No 1907/2006 (REACH), Article 57 above the respective regulatory concentration limit of  $\geq 0.1$  % (w/w).

#### *National legislation*

Storage class 3  
The data applies to the entire pack.

### 15.2 Chemical safety assessment

For this product a chemical safety assessment was not carried out.

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## SECTION 16. Other information

### Full text of H-Statements referred to under sections 2 and 3.

H225 Highly flammable liquid and vapour.  
H319 Causes serious eye irritation.

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## Training advice

Provide adequate information, instruction and training for operators.

## Labelling

*Hazard pictograms*



*Signal word*

Danger

*Hazard statements*

H225 Highly flammable liquid and vapour.

H319 Causes serious eye irritation.

*Precautionary statements*

Prevention

P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.

P240 Ground/bond container and receiving equipment.

Response

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Storage

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

Contains: ethanol

## Key or legend to abbreviations and acronyms used in the safety data sheet

Used abbreviations and acronyms can be looked up at [www.wikipedia.org](http://www.wikipedia.org).

## Regional representation

This information is given on the authorised Safety Data Sheet for your country.

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*The information contained herein is based on the present state of our knowledge. It characterises the product with regard to the appropriate safety precautions. It does not represent a guarantee of any properties of the product.*

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**SECTION 1. Identification of the substance/mixture and of the company/undertaking****1.1 Product identifier**

Catalogue No. 100677  
Product name AOX Sample Preparation Set 25 Tests Spectroquant®

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REACH Registration Number This product is a mixture. REACH Registration Number see section 3.

**1.2 Relevant identified uses of the substance or mixture and uses advised against**

Identified uses Reagent for analysis  
For additional information on uses please refer to the Merck Chemicals portal ([www.merckgroup.com](http://www.merckgroup.com)).

**1.3 Details of the supplier of the safety data sheet**

Company Merck KGaA \* 64271 Darmstadt \* Germany \* Phone:+49 6151 72-0  
Responsible Department LS-QHC \* e-mail: [prodsafe@merckgroup.com](mailto:prodsafe@merckgroup.com)

**1.4 Emergency telephone number** Please contact the regional company representation in your country.

**SECTION 2. Hazards identification****2.1 Classification of the substance or mixture****Classification (REGULATION (EC) No 1272/2008)**

Corrosive to metals, Category 1, H290

Skin corrosion, Category 1B, H314

For the full text of the H-Statements mentioned in this Section, see Section 16.

**2.2 Label elements****Labelling.(REGULATION (EC) No 1272/2008)***Hazard pictograms**Signal word*



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Danger

### *Hazard statements*

H290 May be corrosive to metals.

H314 Causes severe skin burns and eye damage.

EUH071 Corrosive to the respiratory tract.

### *Precautionary statements*

#### Prevention

P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

#### Response

P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P308 + P310 IF exposed or concerned: immediately call a POISON CENTER or doctor/ physician.

### **Reduced labelling (≤125 ml)**

#### *Hazard pictograms*



#### *Signal word*

Danger

#### *Hazard statements*

H314 Causes severe skin burns and eye damage.

#### *Precautionary statements*

P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P308 + P310 IF exposed or concerned: immediately call a POISON CENTER or doctor/ physician.

Contains: nitric acid

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## 2.3 Other hazards

None known.

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## SECTION 3. Composition/information on ingredients

Chemical nature Aqueous solution

### 3.1 Substance

Not applicable

### 3.2 Mixture

#### Hazardous components (REGULATION (EC) No 1272/2008)

*Chemical name (Concentration)*

CAS-No.	Registration number	Classification
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nitric acid ( $\geq 10\%$  -  $< 20\%$ )

*Substance does not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, Annex XIII.*

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Oxidizing liquid, Category 2, H272

Corrosive to metals, Category 1, H290

Acute toxicity, Category 1, H330

Skin corrosion, Category 1A, H314

For the full text of the H-Statements mentioned in this Section, see Section 16.

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## SECTION 4. First aid measures

### 4.1 Description of first aid measures

*General advice*

First aider needs to protect himself.

After inhalation: fresh air. Call in physician.

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/shower. Call a physician immediately.

After eye contact: rinse out with plenty of water. Remove contact lenses. Immediately call in ophthalmologist.

After swallowing: make victim drink water (two glasses at most), avoid vomiting (risk of perforation). Call a physician immediately. Do not attempt to neutralise.

### 4.2 Most important symptoms and effects, both acute and delayed

Risk of blindness!

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The following applies to nitrites/nitrates in general: methaemoglobinaemia after the uptake of large quantities.

Irritation and corrosion, Cough, Shortness of breath, Bloody vomiting, death

#### 4.3 Indication of any immediate medical attention and special treatment needed

No information available.

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## SECTION 5. Firefighting measures

### 5.1 Extinguishing media

#### *Suitable extinguishing media*

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

#### *Unsuitable extinguishing media*

For this substance/mixture no limitations of extinguishing agents are given.

### 5.2 Special hazards arising from the substance or mixture

Not combustible.

Ambient fire may liberate hazardous vapours.

Fire may cause evolution of:

nitrous gases, nitrogen oxides

### 5.3 Advice for firefighters

#### *Special protective equipment for firefighters*

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

#### *Further information*

Suppress (knock down) gases/vapours/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

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## SECTION 6. Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Avoid substance contact. Do not breathe vapours, aerosols. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders:

Protective equipment see section 8.

### 6.2 Environmental precautions

Do not let product enter drains.

### 6.3 Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills.

Observe possible material restrictions (see sections 7 and 10).

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Take up with liquid-absorbent and neutralising material (e.g. Chemizorb® H<sup>+</sup>, Merck Art. No. 101595). Dispose of properly. Clean up affected area.

## 6.4 Reference to other sections

Indications about waste treatment see section 13.

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## SECTION 7. Handling and storage

### 7.1 Precautions for safe handling

#### *Advice on safe handling*

Observe label precautions.

#### *Hygiene measures*

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

### 7.2 Conditions for safe storage, including any incompatibilities

#### *Requirements for storage areas and containers*

No metal or light-weight-metal containers.

#### *Storage conditions*

Tightly closed. Dry. Keep in a well-ventilated place. Keep locked up or in an area accessible only to qualified or authorised persons. Do not store near combustible materials.

Recommended storage temperature see product label.

The data applies to the entire pack.

### 7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

---

## SECTION 8. Exposure controls/personal protection

### 8.1 Control parameters

#### Derived No Effect Level (DNEL)

##### *nitric acid (7697-37-2)*

Worker DNEL, longterm	Local effects	inhalation	1,3 mg/m <sup>3</sup>
--------------------------	---------------	------------	-----------------------

#### Predicted No Effect Concentration (PNEC)

##### *nitric acid (7697-37-2)*

PNEC no data available

### 8.2 Exposure controls

#### Engineering measures

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

See section 7.1.

---

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## Individual protection measures

Protective clothing needs to be selected specifically for the workplace, depending on concentrations and quantities of the hazardous substances handled. The chemical resistance of the protective equipment should be enquired at the respective supplier.

### *Eye/face protection*

Tightly fitting safety goggles

### *Hand protection*

full contact:

Glove material:	Nitrile rubber
Glove thickness:	0,11 mm
Break through time:	> 480 min

splash contact:

Glove material:	Nitrile rubber
Glove thickness:	0,11 mm
Break through time:	> 480 min

The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374, for example KCL 741 Dermatril® L (full contact), KCL 741 Dermatril® L (splash contact).

The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types.

This recommendation applies only to the product stated in the safety data sheet(>,<) supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

### *Other protective equipment*

Acid-resistant protective clothing

### *Respiratory protection*

required when vapours/aerosols are generated.

Recommended Filter type: filter E-(P2)

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

## Environmental exposure controls

Do not let product enter drains.

---

## SECTION 9. Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

Form	liquid
Colour	colourless

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Odour	odourless
Odour Threshold	No information available.
pH	ca. 0 at 20 °C
Melting point	No information available.
Boiling point	No information available.
Flash point	No information available.
Evaporation rate	No information available.
Flammability (solid, gas)	No information available.
Lower explosion limit	No information available.
Upper explosion limit	No information available.
Vapour pressure	No information available.
Relative vapour density	No information available.
Density	ca. 1,06 g/cm <sup>3</sup> at 20 °C
Relative density	No information available.
Water solubility	No information available.
Partition coefficient: n-octanol/water	No information available.
Auto-ignition temperature	No information available.
Decomposition temperature	No information available.
Viscosity, dynamic	No information available.
Explosive properties	Not classified as explosive.
Oxidizing properties	Oxidizing potential

## 9.2 Other data

Corrosion	May be corrosive to metals.
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## SECTION 10. Stability and reactivity

### 10.1 Reactivity

Oxidizing agents

### 10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

### 10.3 Possibility of hazardous reactions

Risk of explosion with:

Risk of ignition or formation of inflammable gases or vapours with:

Metals, Alkali metals, Alkaline earth metals, metal alloys, metallic oxides, Alcohols, Aldehydes, Amines, anhydrides, anilines, Ammonia, alkalines, hydrides, halogen compounds, nonmetallic oxides, nonmetallic halides, nonmetallic hydrogen compounds, nonmetals, phosphides, nitrides, lithium silicide, hydrogen peroxide, organic combustible substances, oxidisable substances, organic solvent, Ketones, Nitriles, organic nitro compounds, hydrazine and derivatives, acetylidene, acids, Fluorine

Generates dangerous gases or fumes in contact with:

Copper, Mercury

### 10.4 Conditions to avoid

no information available

### 10.5 Incompatible materials

Cellulose, Metals

Contact with metals may lead to the formation of nitrous gases and hydrogen.

### 10.6 Hazardous decomposition products

in the event of fire: See section 5.

---

## SECTION 11. Toxicological information

### 11.1 Information on toxicological effects

#### Mixture

#### *Acute oral toxicity*

Symptoms: If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the oesophagus and the stomach.

#### *Acute inhalation toxicity*

Symptoms: mucosal irritations, Cough, Shortness of breath, Possible damages: damage of respiratory tract, After a latency period: Inhalation may lead to the formation of oedemas in the respiratory tract.

#### *Acute dermal toxicity*

This information is not available.

#### *Skin irritation*

Mixture causes burns.

---

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### *Eye irritation*

Mixture causes serious eye damage. Risk of blindness!

### *Sensitisation*

This information is not available.

### *Germ cell mutagenicity*

This information is not available.

### *Carcinogenicity*

This information is not available.

### *Reproductive toxicity*

This information is not available.

### *Teratogenicity*

This information is not available.

### *Specific target organ toxicity - single exposure*

This information is not available.

### *Specific target organ toxicity - repeated exposure*

This information is not available.

### *Aspiration hazard*

This information is not available.

## 11.2 Further information

After uptake:

Bloody vomiting, strong pain (risk of perforation!), tissue damage, death

The following applies to nitrites/nitrates in general: methaemoglobinaemia after the uptake of large quantities.

Other dangerous properties can not be excluded.

Handle in accordance with good industrial hygiene and safety practice.

## Components

### *nitric acid*

#### *Acute inhalation toxicity*

LC50 Rat: > 2,65 mg/l; 4 h ; vapour

OECD Test Guideline 403

#### *Germ cell mutagenicity*

#### *Genotoxicity in vitro*

Ames test

Salmonella typhimurium

Result: negative

Method: OECD Test Guideline 471

---

## SECTION 12. Ecological information

### Mixture

#### 12.1 Toxicity

No information available.

#### 12.2 Persistence and degradability



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## *Biodegradability*

The methods for determining the biological degradability are not applicable to inorganic substances.

### **12.3 Bioaccumulative potential**

No information available.

### **12.4 Mobility in soil**

No information available.

### **12.5 Results of PBT and vPvB assessment**

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted.

### **12.6 Other adverse effects**

#### *Additional ecological information*

Biological effects:

Harmful effect due to pH shift. Forms corrosive mixtures with water even if diluted. Hazard for drinking water supplies. Does not cause biological oxygen deficit.

Discharge into the environment must be avoided.

## **Components**

### *nitric acid*

#### *Biodegradability*

The methods for determining the biological degradability are not applicable to inorganic substances.

#### *Partition coefficient: n-octanol/water*

log Pow: -2,3

OECD Test Guideline 107

Bioaccumulation is not expected.

Substance does not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, Annex XIII.

#### *Henry constant*

2482 Pa·m<sup>3</sup>/mol

Method: (calculated)

(Lit.) Distribution preferentially in air.

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## SECTION 13. Disposal considerations

### *Waste treatment methods*

See [www.retrologistik.com](http://www.retrologistik.com) for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

---

## SECTION 14. Transport information

### Land transport (ADR/RID)

14.1 UN number UN 3316  
14.2 Proper shipping name CHEMICAL KIT  
14.3 Class 9  
14.4 Packing group II  
14.5 Environmentally hazardous --  
14.6 Special precautions for user yes  
Tunnel restriction code E

### Inland waterway transport (ADN)

Not relevant

### Air transport (IATA)

14.1 UN number UN 3316  
14.2 Proper shipping name CHEMICAL KIT  
14.3 Class 9  
14.4 Packing group II  
14.5 Environmentally hazardous --  
14.6 Special precautions for user no

### Sea transport (IMDG)

14.1 UN number UN 3316  
14.2 Proper shipping name CHEMICAL KIT  
14.3 Class 9  
14.4 Packing group II  
14.5 Environmentally hazardous --  
14.6 Special precautions for user yes  
EmS F-A S-P

### 14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not relevant

THIS TRANSPORT DATA APPLIES TO THE ENTIRE PACK!

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## SECTION 15. Regulatory information

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

#### *EU regulations*

Major Accident Hazard 96/82/EC  
Legislation Directive 96/82/EC does not apply

SEVESO III  
Not applicable

Occupational restrictions Take note of Dir 94/33/EC on the protection of young people at work.

Regulation (EC) No 1005/2009 on substances that deplete the ozone layer not regulated

Regulation (EC) No 850/2004 of the European Parliament and of the Council of 29 April 2004 on persistent organic pollutants and amending Directive 79/117/EEC not regulated

Substances of very high concern (SVHC) This product does not contain substances of very high concern according to Regulation (EC) No 1907/2006 (REACH), Article 57 above the respective regulatory concentration limit of  $\geq 0.1$  % (w/w).

#### *National legislation*

Storage class 3  
The data applies to the entire pack.

### 15.2 Chemical safety assessment

For this product a chemical safety assessment was not carried out.

---

## SECTION 16. Other information

### Full text of H-Statements referred to under sections 2 and 3.

H272 May intensify fire; oxidizer.  
H290 May be corrosive to metals.  
H314 Causes severe skin burns and eye damage.  
H330 Fatal if inhaled.

### Training advice

Provide adequate information, instruction and training for operators.

---

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## Labelling

### *Hazard pictograms*



### *Signal word*

Danger

### *Hazard statements*

H290 May be corrosive to metals.

H314 Causes severe skin burns and eye damage.

### *Precautionary statements*

#### Prevention

P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

#### Response

P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P308 + P310 IF exposed or concerned: immediately call a POISON CENTER or doctor/ physician.

Contains: nitric acid

## **Key or legend to abbreviations and acronyms used in the safety data sheet**

Used abbreviations and acronyms can be looked up at [www.wikipedia.org](http://www.wikipedia.org).

## **Regional representation**

This information is given on the authorised Safety Data Sheet for your country.

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*The information contained herein is based on the present state of our knowledge. It characterises the product with regard to the appropriate safety precautions. It does not represent a guarantee of any properties of the product.*

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according to Regulation (EC) No. 1907/2006

Revision Date 12.09.2018

Version 13.1

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**SECTION 1. Identification of the substance/mixture and of the company/undertaking****1.1 Product identifier**

Catalogue No. 100677  
Product name AOX Sample Preparation Set 25 Tests Spectroquant®

AOX-6

REACH Registration Number This product is a mixture. REACH Registration Number see section 3.

**1.2 Relevant identified uses of the substance or mixture and uses advised against**

Identified uses Reagent for analysis  
For additional information on uses please refer to the Merck Chemicals portal ([www.merckgroup.com](http://www.merckgroup.com)).

**1.3 Details of the supplier of the safety data sheet**

Company Merck KGaA \* 64271 Darmstadt \* Germany \* Phone:+49 6151 72-0  
Responsible Department LS-QHC \* e-mail: [prodsafe@merckgroup.com](mailto:prodsafe@merckgroup.com)

**1.4 Emergency telephone number** Please contact the regional company representation in your country.

---

**SECTION 2. Hazards identification****2.1 Classification of the substance or mixture****Classification (REGULATION (EC) No 1272/2008)**

Oxidizing solid, Category 3, H272

Skin irritation, Category 2, H315

Eye irritation, Category 2, H319

Respiratory sensitisation, Category 1, H334

Skin sensitisation, Category 1, H317

Reproductive toxicity, Category 1B, H360FD

Specific target organ toxicity - single exposure, Category 3, Respiratory system, H335

For the full text of the H-Statements mentioned in this Section, see Section 16.

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## 2.2 Label elements

Labelling.(REGULATION (EC) No 1272/2008)

*Hazard pictograms*



*Signal word*

Danger

*Hazard statements*

H360FD May damage fertility. May damage the unborn child.

H272 May intensify fire; oxidizer.

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

H319 Causes serious eye irritation.

H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

H335 May cause respiratory irritation.

*Precautionary statements*

Prevention

P201 Obtain special instructions before use.

P280 Wear protective gloves.

Response

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P342 + P311 If experiencing respiratory symptoms: Call a POISON CENTER/doctor.

Restricted to professional users.

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## Reduced labelling (≤125 ml)

### Hazard pictograms



### Signal word

Danger

### Hazard statements

H360FD May damage fertility. May damage the unborn child.

H317 May cause an allergic skin reaction.

H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

### Precautionary statements

P201 Obtain special instructions before use.

P280 Wear protective gloves.

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

P342 + P311 If experiencing respiratory symptoms: Call a POISON CENTER/doctor.

Contains: disodium tetraborate, Potassium persulfate

## 2.3 Other hazards

None known.

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## SECTION 3. Composition/information on ingredients

Chemical nature Mixture of inorganic compounds

### 3.1 Substance

Not applicable

### 3.2 Mixture

#### Hazardous components (REGULATION (EC) No 1272/2008)

##### Chemical name (Concentration)

CAS-No.	Registration number	Classification
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disodium tetraborate ( $\geq 25\%$ - $< 50\%$ )		
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PBT/vPvB: Not applicable for inorganic substances

1330-43-4	01-2119490790-32-	
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XXXX Eye irritation, Category 2, H319  
Reproductive toxicity, Category 1B, H360FD

Potassium persulfate ( $\geq 20\%$  -  $< 25\%$ )

7727-21-1 \*)

Oxidizing solid, Category 3, H272  
Acute toxicity, Category 4, H302  
Skin irritation, Category 2, H315  
Eye irritation, Category 2, H319  
Respiratory sensitisation, Category 1, H334  
Skin sensitisation, Category 1, H317  
Specific target organ toxicity - single exposure, Category 3, H335

\*) A registration number is not available for this substance as the substance or its use are exempted from registration according to Article 2 REACH Regulation (EC) No 1907/2006, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.

For the full text of the H-Statements mentioned in this Section, see Section 16.

---

## SECTION 4. First aid measures

### 4.1 Description of first aid measures

#### *General advice*

First aider needs to protect himself.

After inhalation: fresh air. Call in physician.

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/shower. Consult a physician.

After eye contact: rinse out with plenty of water. Call in ophthalmologist. Remove contact lenses.

After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

### 4.2 Most important symptoms and effects, both acute and delayed

irritant effects, Allergic reactions, Cough, Shortness of breath

The following applies to boron compounds in general: resorption is followed by nausea and vomiting, agitation, spasms, CNS disorders, cardiovascular disorders.

### 4.3 Indication of any immediate medical attention and special treatment needed

No information available.



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## SECTION 5. Firefighting measures

### 5.1 Extinguishing media

*Suitable extinguishing media*  
Foam, Carbon dioxide (CO<sub>2</sub>)

*Unsuitable extinguishing media*  
Water, Foam

### 5.2 Special hazards arising from the substance or mixture

Not combustible.

Caution! in contact with water product releases:  
corrosive vapours

Has a fire-promoting effect due to release of oxygen.

Ambient fire may liberate hazardous vapours.

Fire may cause evolution of:  
Sulphur oxides

### 5.3 Advice for firefighters

*Special protective equipment for firefighters*

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

*Further information*

Suppress (knock down) gases/vapours/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

---

## SECTION 6. Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Avoid inhalation of dusts. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders:

Protective equipment see section 8.

### 6.2 Environmental precautions

Do not let product enter drains.

### 6.3 Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up carefully. Dispose of properly. Clean up affected area. Avoid generation of dusts.

### 6.4 Reference to other sections

Indications about waste treatment see section 13.

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## SECTION 7. Handling and storage

### 7.1 Precautions for safe handling

#### *Advice on safe handling*

Observe label precautions.

Work under hood. Do not inhale substance/mixture.

#### *Hygiene measures*

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

### 7.2 Conditions for safe storage, including any incompatibilities

#### *Storage conditions*

Tightly closed. Dry. Keep in a well-ventilated place. Keep locked up or in an area accessible only to qualified or authorised persons. Do not store near combustible materials.

Recommended storage temperature see product label.

The data applies to the entire pack.

### 7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

---

## SECTION 8. Exposure controls/personal protection

### 8.1 Control parameters

#### **Derived No Effect Level (DNEL)**

##### *disodium tetraborate (1330-43-4)*

Worker DNEL, acute	Local effects	inhalation	2,52 mg/m <sup>3</sup> (Expressed as Boron)
Worker DNEL, longterm	Systemic effects	dermal	68 mg/kg Body weight (Expressed as Boron)
Worker DNEL, longterm	Systemic effects	inhalation	1,45 mg/m <sup>3</sup> (Expressed as Boron)
Worker DNEL, longterm	Local effects	inhalation	2,52 mg/m <sup>3</sup> (Expressed as Boron)
Consumer DNEL, acute	Systemic effects	oral	0,17 mg/kg Body weight (Expressed as Boron)
Consumer DNEL, acute	Local effects	inhalation	2,52 mg/m <sup>3</sup> (Expressed as Boron)
Consumer DNEL, longterm	Systemic effects	dermal	34,3 mg/kg Body weight (Expressed as Boron)
Consumer DNEL, longterm	Systemic effects	inhalation	0,73 mg/m <sup>3</sup> (Expressed as Boron)
Consumer DNEL, longterm	Systemic effects	oral	0,17 mg/kg Body weight (Expressed as Boron)
Consumer DNEL, longterm	Local effects	inhalation	2,52 mg/m <sup>3</sup> (Expressed as Boron)

#### **Predicted No Effect Concentration (PNEC)**

##### *disodium tetraborate (1330-43-4)*

PNEC Fresh water	2,9 mg/l (Expressed as Boron)
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PNEC Marine water	2,9 mg/l (Expressed as Boron)
PNEC Aquatic intermittent release	13,7 mg/l (Expressed as Boron)
PNEC Sewage treatment plant	10 mg/l (Expressed as Boron)
PNEC Soil	5,7 mg/kg (Expressed as Boron)

## 8.2 Exposure controls

### Engineering measures

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

See section 7.1.

### Individual protection measures

Protective clothing needs to be selected specifically for the workplace, depending on concentrations and quantities of the hazardous substances handled. The chemical resistance of the protective equipment should be enquired at the respective supplier.

#### *Eye/face protection*

Safety glasses

#### *Hand protection*

full contact:

Glove material:	Nitrile rubber
Glove thickness:	0,11 mm
Break through time:	> 480 min

splash contact:

Glove material:	Nitrile rubber
Glove thickness:	0,11 mm
Break through time:	> 480 min

The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374, for example KCL 741 Dermatril® L (full contact), KCL 741 Dermatril® L (splash contact).

This recommendation applies only to the product stated in the safety data sheet (>,<) supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

#### *Other protective equipment*

protective clothing

#### *Respiratory protection*

required when dusts are generated.

Recommended Filter type: Filter P 3 (acc. to DIN 3181) for solid and liquid particles of toxic and very toxic substances

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

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---

## Environmental exposure controls

Do not let product enter drains.

---

## SECTION 9. Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

Form	powder, finocrystalline
Colour	white
Odour	odourless
Odour Threshold	Not applicable
pH	No information available.
Melting point	No information available.
Boiling point	No information available.
Flash point	No information available.
Evaporation rate	No information available.
Flammability (solid, gas)	No information available.
Lower explosion limit	No information available.
Upper explosion limit	No information available.
Vapour pressure	No information available.
Relative vapour density	No information available.
Density	No information available.
Relative density	No information available.
Water solubility	No information available.
Partition coefficient: n-octanol/water	No information available.
Auto-ignition temperature	No information available.
Decomposition temperature	No information available.
Viscosity, dynamic	No information available.

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Explosive properties Not classified as explosive.  
Oxidizing properties The substance or mixture is classified as oxidizing with the category 3.

## 9.2 Other data

none

---

## SECTION 10. Stability and reactivity

### 10.1 Reactivity

strong oxidising agent

### 10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

### 10.3 Possibility of hazardous reactions

Risk of ignition or formation of inflammable gases or vapours with:

Exothermic reaction with:

Reducing agents, combustible substances, Sodium hydroxide, Potassium hydroxide, alkali hydroxides, Water

Violent reactions possible with:

strong oxidising agents, Acids, metallic salts

### 10.4 Conditions to avoid

no information available

### 10.5 Incompatible materials

no information available

### 10.6 Hazardous decomposition products

in the event of fire: See section 5.

---

## SECTION 11. Toxicological information

### 11.1 Information on toxicological effects

#### Mixture

#### *Acute oral toxicity*

Acute toxicity estimate: > 2.000 mg/kg

Calculation method

Symptoms: Irritations of mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract.

#### *Acute inhalation toxicity*

Symptoms: mucosal irritations, Cough, Shortness of breath, Possible damages:, damage of respiratory tract, Lung oedema

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---

### *Acute dermal toxicity*

This information is not available.

### *Skin irritation*

Mixture causes skin irritation.

### *Eye irritation*

Mixture causes serious eye irritation.

### *Sensitisation*

Mixture may cause an allergic skin reaction.

May cause allergy or asthma symptoms or breathing difficulties if inhaled.

### *Germ cell mutagenicity*

This information is not available.

### *Carcinogenicity*

This information is not available.

### *Reproductive toxicity*

This information is not available.

### *Teratogenicity*

This information is not available.

### *CMR effects*

Teratogenicity:

May harm the unborn child.

Reproductive toxicity:

May impair fertility.

### *Specific target organ toxicity - single exposure*

Mixture may cause respiratory irritation.

### *Specific target organ toxicity - repeated exposure*

This information is not available.

### *Aspiration hazard*

This information is not available.

## 11.2 Further information

Absorption via:

Gastrointestinal tract, Mucous membranes

Other dangerous properties can not be excluded.

The following applies to boron compounds in general: resorption is followed by nausea and vomiting, agitation, spasms, CNS disorders, cardiovascular disorders.

This substance should be handled with particular care.

## Components

### *disodium tetraborate*

*Acute oral toxicity*

LD50 Rat: > 2.500 mg/kg

OECD Test Guideline 401

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*Acute inhalation toxicity*

LC50 Rat: > 2,04 mg/l; 4 h ; dust/mist (highest concentration to be prepared) The value is given in analogy to the following substances:  
OECD Test Guideline 403

*Acute dermal toxicity*

LD50 Rabbit: > 2.000 mg/kg (ECHA) The value is given in analogy to the following substances:

*Skin irritation*

Rabbit

Result: No irritation

(ECHA) The value is given in analogy to the following substances:

*Germ cell mutagenicity*

*Genotoxicity in vitro*

Ames test

Result: negative

(IUCLID)

*Reproductive toxicity*

No substantiated information from toxicological studies available.

*Teratogenicity*

No substantiated information from toxicological studies available.

*Potassium persulfate*

*Acute oral toxicity*

LD50 Rat: 802 mg/kg (RTECS)

*Sensitisation*

Human experience

Result: positive

(Lit.)

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## SECTION 12. Ecological information

### Mixture

#### 12.1 Toxicity

No information available.

#### 12.2 Persistence and degradability

No information available.

#### 12.3 Bioaccumulative potential

No information available.

#### 12.4 Mobility in soil

No information available.

#### 12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted.

#### 12.6 Other adverse effects

*Additional ecological information*

Discharge into the environment must be avoided.

### Components

*disodium tetraborate*

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*Toxicity to daphnia and other aquatic invertebrates*

EC5 *E.sulcatum*: 1,3 mg/l; 72 h (IUCLID)

*Toxicity to algae*

IC50 *Desmodesmus subspicatus* (green algae): 158 mg/l; 96 h (IUCLID)

*Toxicity to bacteria*

EC0 *Pseudomonas putida*: 15,8 mg/l; 16 h (IUCLID)

*Biodegradability*

The methods for determining the biological degradability are not applicable to inorganic substances.

*Partition coefficient: n-octanol/water*

log Pow: -1,53

Not applicable

PBT/vPvB: Not applicable for inorganic substances

*Potassium persulfate*

*Toxicity to fish*

LC50 *Poecilia reticulata* (guppy): 100 mg/l; 96 h (Hommel)

*Toxicity to daphnia and other aquatic invertebrates*

EC50 *Daphnia magna* (Water flea): 357 mg/l; 24 h (Hommel)

*Toxicity to bacteria*

EC50 *Pseudomonas putida*: 36 mg/l (Hommel)



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## SECTION 13. Disposal considerations

### *Waste treatment methods*

See [www.retrologistik.com](http://www.retrologistik.com) for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

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## SECTION 14. Transport information

### Land transport (ADR/RID)

14.1 UN number UN 3316  
14.2 Proper shipping name CHEMICAL KIT  
14.3 Class 9  
14.4 Packing group II  
14.5 Environmentally hazardous --  
14.6 Special precautions for user yes  
Tunnel restriction code E

### Inland waterway transport (ADN)

Not relevant

### Air transport (IATA)

14.1 UN number UN 3316  
14.2 Proper shipping name CHEMICAL KIT  
14.3 Class 9  
14.4 Packing group II  
14.5 Environmentally hazardous --  
14.6 Special precautions for user no

### Sea transport (IMDG)

14.1 UN number UN 3316  
14.2 Proper shipping name CHEMICAL KIT  
14.3 Class 9  
14.4 Packing group II  
14.5 Environmentally hazardous --  
14.6 Special precautions for user yes  
EmS F-A S-P

### 14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not relevant

THIS TRANSPORT DATA APPLIES TO THE ENTIRE PACK!

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## SECTION 15. Regulatory information

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

#### *EU regulations*

Major Accident Hazard 96/82/EC  
Legislation Oxidizing  
3  
Quantity 1: 50 t  
Quantity 2: 200 t

SEVESO III  
OXIDIZING LIQUIDS AND SOLIDS  
P8  
Quantity 1: 50 t  
Quantity 2: 200 t

Occupational restrictions Take note of Dir 94/33/EC on the protection of young people at work. Observe work restrictions regarding maternity protection in accordance to Dir 92/85/EEC or stricter national regulations where applicable.

Regulation (EC) No 1005/2009 on substances that deplete the ozone layer not regulated

Regulation (EC) No 850/2004 of the European Parliament and of the Council of 29 April 2004 on persistent organic pollutants and amending Directive 79/117/EEC not regulated

Substances of very high concern (SVHC) This product does contain substances of very high concern according to Regulation (EC) No 1907/2006 (REACH), Article 59 above the respective regulatory concentration limit of > 0.1 % (w/w).

Contains: disodium tetraborate

#### *National legislation*

Storage class 3  
The data applies to the entire pack.

### 15.2 Chemical safety assessment

For this product a chemical safety assessment was not carried out.

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## SECTION 16. Other information

### Full text of H-Statements referred to under sections 2 and 3.

H272	May intensify fire; oxidizer.
H302	Harmful if swallowed.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335	May cause respiratory irritation.
H360FD	May damage fertility. May damage the unborn child.

### Training advice

Provide adequate information, instruction and training for operators.

### Labelling

#### Hazard pictograms



#### Signal word

Danger

#### Hazard statements

H272 May intensify fire; oxidizer.  
H315 Causes skin irritation.  
H317 May cause an allergic skin reaction.  
H319 Causes serious eye irritation.  
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
H335 May cause respiratory irritation.  
H360 May damage fertility or the unborn child.

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## *Precautionary statements*

### Prevention

P201 Obtain special instructions before use.

P280 Wear protective gloves.

### Response

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P342 + P311 If experiencing respiratory symptoms: Call a POISON CENTER/doctor.

### Further information

Restricted to professional users.

Contains: disodium tetraborate, Potassium persulfate

### **Key or legend to abbreviations and acronyms used in the safety data sheet**

Used abbreviations and acronyms can be looked up at [www.wikipedia.org](http://www.wikipedia.org).

### **Regional representation**

This information is given on the authorised Safety Data Sheet for your country.

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*The information contained herein is based on the present state of our knowledge. It characterises the product with regard to the appropriate safety precautions. It does not represent a guarantee of any properties of the product.*