

# Safety Data Sheet according to Regulation (EC) No 1907/2006 (amended by Regulation (EC) No 453/2010)

Tradename: DK-DOX® AKTIV component 1  
Reviewed on: 01.06.2015  
Version: 9

Valid from: 01.06.2015  
Replaced version: 8

## 1. Identification of the substance / preparation and the company

### 1.1 Product

Name of substance: DK-DOX® AKTIV component 1

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

Relevant identified uses:

Precursor for the manufacturing of chlorine dioxide

Uses advised against:

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### 1.3 Details of manufacturer having prepared the safety data sheet

#### Manufacturer/ supplier

Dr. Kücke GmbH

#### Street

Schaumburger Str. 11

#### Nat.-ID./Postal code/Location

DE-30900 Wedemark

#### Contact point for technical information

See manufacturer

#### Phone / Fax / E-Mail

+49 (0) 51303766163 / +49 (0) 51303766165 / E-Mail: kuecke@kuecke.de

### 1.4 Emergency number/ information

+49 (0) 61 31 – 19 24 0 (Counseling center for poisoning Mainz)

## 2. Possible hazard

### 2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008, appendix VII (substance):

No labeling requirement.

### 2.2 Labeling element according to regulation (EC) No. 1272/2008 (substances) / Guideline 1999/45/EC (mixtures)

Pictogram/ Hazard symbol: -

Signal word: -

Hazardous compound for the labeling includes: -

Hazard statement: -

Safety statement: -

Other labeling elements: -

### 2.3 Other hazards:

The dried product works oxidizing.

Contact with acid liberates very toxic gas.

## 3. Composition / information on ingredients



### 3.1 mixtures

Name of substance: sodium chlorite

EC-No.:231-836-6 CAS-No.:7758-19-2 REACH-registration-No.:01-2119529240-51

Quantity: < 1 %

Classification according to regulation (EC) No. 1272/2008:

 Oxid. Liquid 1, H271;  Acute Tox. 4 H302;  Eye Damage 1 H318;  STOT Rep. Exp. 2 H373 spleen  
(The choice of words for the given hazard statements can be gathered from section 16)

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## 4. First-aid measures

### 4.1 Description of first-aid measures

#### General information

Immediately remove contaminated clothing.

#### After inhalation

Remove to fresh air.

#### After contact with skin

Immediately rinse with water. Remove clothing and shoes contaminated by the product. Perform medical treatment.

#### After contact with eyes

Rinse eye with eyelid open for several minutes under running water and seek medical advice.

#### After swallowing

Rinse mouth and drink plenty of water. Do not induce vomiting, seek medical attention immediately.

### 4.2 Most important acute and delayed symptoms and effects: -

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

**After eye contact:** Treatment as for chemical burn with acid

**After ingestion:** gastric lavage, as Treatment for burns caused by acid or Methaemoglobinbuilder.

## 5. Fire fighting measures

### 5.1 Extinguishing agents

Suitable: Water

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

During heating or in case of fire Chlorine dioxide, chlorine, hydrogen chloride, oxygen can be released.

### 5.3 Advice for fire fighting

#### Protective equipment:

Wear self-contained breathing apparatus.

#### Further information:

Heating the container leads to pressure increase, bursting and explosion.

Spray endangered containers with water for cooldown.

Collect contaminated firefighting water separately, must not be discharged into drains.

Fire residues and contaminated firefighting water must be disposed of according to local regulations.

## 6. Accidental release measures

### 6.1 Personal precautions, protective equipment and applicable process in case of emergency

Wear protective equipment. Keep spectators away.

### 6.2 Environmental protection measures

Prevent entry into drains, pits and cellars.

Do not discharge into drains / surface water / groundwater.

Do not get in the ground / soil.

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

Provide adequate ventilation. Do not let dry. Never return spills to the original container for reuse (risk of decomposition).

Soak up with absorbent material (sand, diatomaceous earth, acid- or universal binding agents).

Use neutralizing agent. Dispose contaminated material as waste according to item 13.

### 6.4 Reference to other sections

Note protective measures at section 7, 8 and 13.

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## 7. Handling and Storage

### 7.1 Precautions for safe handling

Keep container tightly closed. Keep away from heat and direct sunlight. Ensure good ventilation / exhaustion at the workplace. Avoid contact with skin and eyes. Protect against contamination, therefore never return spilled product into its original container. Do not leave containers open. Minimum standards in accordance with TRGS 501 have to comply. Consider protection guide 101 "General Storage" when designing the work process.

#### Information about fire and explosion protection

Never allow to dry larger quantities of the product. After drying, the residue is to be dissolved with water. Keep away from: acids, reducing agents, sulfur-containing substances and combustible materials such as wood, paper, straw, textiles, oil, grease, rubber, etc.

#### Measures for the prevention of spray and aerosols

Store and transport containers upright. Only use containers that are approved specifically for the product. Provide suitable aerators to all vessels.  
Keep container tightly closed and store in a cool, well-ventilated place.

#### Measures to protect the environment

Do not give into waters.

#### General hygiene measures

Do not smoke, drink nor eat.

### 7.2 Conditions for safe storage including any incompatibilities

#### Requirements for storage container

Store and transport containers upright. Keep container tightly closed and store in a cool, well-ventilated place. Frost-free storage. Do not store together with acids. Protect from sunlight and direct sunlight.

#### Requirements for storage rooms and vessels

Store dry. Provide suitable aerators to all vessels.  
Keep only in the original container or use containers that are approved specifically for the product. Suitable material for containers VA-steel (passivated), PVC, PE, PP, polytetrafluoroethylene, glass, ceramics.

#### Storage class:

8B

#### Specific end use

### 7.3 Branche- und field specific guidelines: -

## 8. Limited and controlled exposure / Personal Protection

### 8.1 To control parameters

#### 8.1.1 Limit for the exposing at workplace and/or biological limit

##### Workplace exposure limit (WEL) Germany

Name of substance: chlorine dioxide; CAS-No.: 10049-04-4

Specification: AGW

Value: 0,28 mg/m<sup>3</sup>, 0,1 ml/m<sup>3</sup>

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## 8.1.2 DNEL- und PNEC- Value

Name of substance: chlorine dioxide; CAS-No.: 10049-04-4  
Specification : DNEL- und PNEC  
Value: DNEL-value  
Longterm inhalative/lokal 0,28 mg/m<sup>3</sup> professionally  
Longterm inhalative/systematic 0,28 mg/m<sup>3</sup> professionally  
Shortterm inhalative/lokal 0,56 mg/m<sup>3</sup> professionally  
Shortterm inhalative/systematic 0,56 mg/m<sup>3</sup> professionally  
Longterm oral/systematic 0,20 mg/kg bw/day general  
• PNEC-value  
Fresh water: 0,00021 mg/L  
Salt water: 0,000042 mg/L

## 8.1.3 Control-Banding (e.g. ILO, EMKG)

Relevante Parameter / classification: -  
Relevante protection guide: -

## 8.2 Limitation and monitoring of exposure

### 8.2.1 Appropriate engineering controls: -

### 8.2.2 Individual protection measures - Personal Protective Equipment eye / face protection

Tightly sealed goggles

#### Skin protection

##### Gloves

At full or splash contact:  
Chemical resistant gloves (DIN EN 374)  
Glove material: nitrile rubber /nitril latex – NBR  
layer thickness (mm): > 0,4 bzw. 0,11 mm  
penetration time (min.): > 480 min.

##### Different skin protection

Body protection: Protective clothing  
Protect skin by using skin creams

##### Respirator

Respiratory protection is required when: gases and mist are formed.  
Suitable respiratory protective equipment: gas filter device (DIN EN 141)  
When thresholds are exceeded use respiratory equipment with filter B (Gray)

##### Heat / cold protection

Protect against frost.  
Protect from heat and direct sunlight.

### 8.2.3 Limitation and monitoring of environmental exposure

See section 6 and 7.

Minimum standards for protective measures when handling working substances are listed in TRGS 500. When using do not smoke, eat, drink. Remove contaminated or soaked clothing. Wash hands before breaks and at end of work. Avoid contact with skin, eyes and clothing. Protect skin by using skin creams. Avoid formation of aerosols and sprays.

## 9. Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

Look  
- Form: liquid  
- Color: yellowish  
Smell: almost odorless  
pH at 20°C: 10,5

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Melting point: ~ -5 °C  
Boiling point: ca. 100 °C  
Flash point: not applicable  
upper/lower ignition- or explosion threshold: The product is not explosive.  
Steam pressure at 20°C: ~ 23 hPa  
relative density at 20°C: 1,005 g / mL  
Solubility in / Miscibility with Water: Fully miscible  
Self-igniting: Product is not self-igniting.  
Decomposition temperature: > 150 °C  
Viscosity, dynamic at 20°C: ca. 2,4 mPa\*s  
Explosive attribute: Product is not explosive.

## 9.2 Other Information: -

## 10. Stability and reactivity

### 10.1 Reactivity

Reacts with oxidants and on acidification to chlorine dioxide.

### 10.2 Chemical Stability

In the alkaline medium over the years stable.

### 10.3 Possibility of hazardous reactions

Do not allow to dry. Dried-on combustible materials (wood, paper, textiles) product makes this material highly flammable.

### 10.4 Avoid condition

Protect from heat / overheating.

Protect from light.

### 10.5 Incompatible Materials

Impurities, metal ions, metal salts, acids, reducing agents, combustible materials

Release of chlorine dioxide

### 10.6 Hazardous decomposition products

Chlorine dioxide (ClO<sub>2</sub>), Thermal decomposition can lead to release of chlorine and oxygen. Risk of overpressure and burst due to decomposition in confined spaces and pipes.

## 11. Toxicological information

### 11.1 Information on toxicological effects of mixtures

Based on available data the classification criteria are not met.

#### For sodium chlorite:

Acute oral toxicity: LD50 284 mg / kg rat (based sodium chlorite; OECD 401)

Acute dermal toxicity: LD50 134 mg / kg rabbit (based on sodium chlorite; EPA OP 2)

#### Irritation to the skin:

Irritating

#### Serious eye damage / eye irritation:

Irritating

#### Sensitization of airways/ skin:

No sensibilization known.

#### Symptoms and effects (delayed and chronic) with details of the routes of exposure;

#### Information on toxicokinetics, metabolism and distribution:

Mucous membrane irritation possible. Mixture acts as methemoglobinbuilder.

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## 12. Ecological information

### 12.1 Ecotoxicity

#### Toxicity of sodium chlorite

Acute fish toxicity: LC50 105 mg / L 96 h Cyprinodon variegatus EPA OPP 72-1  
Acute toxicity to algae: ErC50 1 mg / L 96 h Selenastrum capricornutum EPA OPP 122-2  
Acute crustacea: EC50 <1 mg / L 48 h Daphnia magna (OECD 202 Water flea)  
Acute bacterial toxicity: (> 100 mg / L) 3h activated sludge OECD 209

### 12.2 Persistence and degradability

Is decomposed to chloride.

### 12.3 Bioaccumulation potential

No information available.

### 12.4 Mobility in the soil

No information available.

### 12.5 Result of the PBT- und vPvB-assessment

No information available.

### 12.6 Other adverse effect

No information available.

## 13. Disposal

### 13.1 Waste treatments methods

#### Treatment of contaminated packaging

Emptied, not desiccated container must be disposed of as containers with harmful residues. Chemicals must be disposed of in compliance with the respective national regulations. Under [www.retrologistik.de](http://www.retrologistik.de) you will find country- and substance-specific information as well as contact information.

#### Waste Code according to European Waste Catalogue (EWC)

061301 wastes from inorganic chemical processes; Wastes from inorganic chemical processes. Inorganic plant protection products, wood-preserving agents and other biocides. Classified as hazardous waste. Non-contaminated packaging can be supplied to a recycling. Contaminated packages should be treated like the product.

#### Special precautions

Do not allow to dry.  
Must not be disposed together with household garbage. Do not empty into drains. Must be disposed of in accordance with local regulations.

#### Relevant EU or other regulations

Classification according to Waste Catalogue Ordinance AVV  
15 00 00 WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING (nec)  
15 01 00 packaging (including separately collected municipal packaging waste)  
15 01 10\* packaging containing residues of or contaminated by dangerous substances  
06 00 00 WASTES FROM INORGANIC CHEMICAL PROCESSES  
06 13 00 wastes from inorganic chemical processes not otherwise  
06 13 01\* inorganic plant protection products, wood preservatives and other biocides  
18 01 06\* Chemicals, consisting of or containing dangerous substances such

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## 14. Transport information

### 14.1 UN-Number

Not hazardous according to these transportation regulations.

14.2 UN proper shipping name: not applicable

14.3 Transport hazard class: not applicable

14.4 Packing group: not applicable

### 14.5 Environmental danger

#### Plate environmentally hazardous substances

ADR/RID / IMDG-Code / ICAO-TI / IATA-DGR:  ja /  no

Marine Pollutant:  yes /  no

14.6 Special precautions for user: not applicable

14.7 Bulk according to Annex II of MARPOL 73/78 and the IBC Code

not applicable.

## 15. Regulatory information

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

### National regulations

#### Water hazard class

WHC 1 (According to VwVwS, Annex 4): slightly hazardous for water

#### Restriction of occupation:

Observe employment restrictions for expectant and nursing mothers (MuSchArbV).

Observe employment restrictions for young people according to § 22 JArbSchG.

#### Other relevant legislation:

Corresponds to the German Drinking Water Ordinance (TrinkwV) 2001

15.2 Chemical Safety Assessment: not applicable

## 16. Further information

### Changes since the last version

This information is based on the present state of knowledge, however, offers no assurance of product properties and establishes no contract legal rights.

### Abbreviations:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)  
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)  
IMDG: International Maritime Code for Dangerous Goods  
IATA: International Air Transport Association  
IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)  
ICAO: International Civil Aviation Organization  
ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)  
GHS: Globally Harmonized System of Classification and Labelling of Chemicals  
LC50: Lethal concentration, 50 percent  
LD50: Lethal dose, 50 percent

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## Literature and data sources

**Department issuing MSDS:** Department laboratory development

**Contact:** Dr. Fritz Kücke

**Methods in accordance with Article 9 of Regulation (EC) no. 1272/2008 which were used to evaluate the information for the purpose of classification**

Classification according to Regulation (EC) No. 1272/2008, Annex VII (substances)

## Full text of H-phrases, hazard statements, safety phrases and / or precautionary statements is 2 to 15 referred to in sections

H271 May cause fire or explosion; strong oxidizer.

H302 Harmful if swallowed.

H318 Causes serious eye damage.

H373 May cause damage to organs through prolonged or repeated exposure.

In addition, see section 2.

## Training for workers

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## Further information

The information in this SDS is correct to the best of our knowledge at time of printing. The information is intended to give you advice about the safe handling of the product named in this safety during storage, processing, transport and disposal. The details are not transferable to other products. As far as the product is mixed with other materials or in any process, or undergoes processing, the information in this SDS, to the extent that it does not specifically indicate otherwise, can not be transferred to the new made material.

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