

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

Tradename: DK-DOX® **AKTIV** component 2
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 2

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: kueke@kueke.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):

Oxidising solid, Category 3, H272 (Ox. Sol. 3)

Acute toxicity oral, Category 4, H302 (Acute Tox. 4)

Corrosion / irritation to the skin, category 2, H315 (Skin Irrit. 2)

Serious eye damage / eye irritation, Category 1, H318 (Eye Dam. 1)

Respiratory, Category 1, H334 (Resp. Sens. 1)

Skin sensitization, Category 1, H317 (Skin Sens. 1)

The mixture is present as a solid.

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

Pictogram/ Hazard symbol:



GHS03



GHS05



GHS07



GHS08

Signal word: danger

Hazardous compound for the labeling includes: -

Hazard statement:

H272 May intensify fire; oxidizer.

H302 Harmful if swallowed.

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

H318 Causes serious eye damage.

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

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Safety statement:

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

P221 Take any precaution to avoid mixing with combustibles....

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

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

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

P333 + P313 If skin irritation or rash occurs: Get medical advice/attention.

Other labeling elements: -

2.3 Other hazards: -

3. Composition / information on ingredients

3.1 mixtures

Name of substance: sodiumperoxodisulfate

EC-No.: 231-892-1 CAS-No.: 7775-27-1 REACH-registration No.: 01-2119495975-15

Value: > 50 %

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



H272, H302, H315, H317, H319, danger

Name of substance: sodiumhydrogensulfate

EG-No.: 231-665-7 CAS-No.: 7681-38-1 REACH-registration No.: 01-2119552465-36-XXXX

Value: < 10 %

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



H318, danger

(The choice of words for the given hazard statements can be gathered from section 2 and 16)

4. First-aid measures

4.1 Description of first-aid measures

General information

Immediately remove contaminated clothing.

After inhalation

Provide fresh air. In the event of symptoms take medical treatment.

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:

Treat symptomatically.

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.

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5. **Fire fighting measures**

5.1 **Extinguishing agents**

Suitable: Water

Unsuitable: High pressure waterjet

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

Danger of forming toxic pyrolysis products. Sulfur oxides (SO_x).

5.3 **Advice for fire fighting**

Protective equipment:

Wear self-contained breathing apparatus. Wear fully protective suit.

Further information:

Spray endangered containers with water. 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**

Ensure adequate ventilation.

Use personal protective clothing.

Avoid dust formation.

6.2 **Environmental protection measures**

Spray Dust with water.

Keep contaminated washing water and dispose of appropriately.

Prevent from entering sewers, pits and cellars, drains / surface water / groundwater, 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.

7. **Handling and Storage**

7.1 **Precautions for safe handling**

Use only in well-ventilated areas.

Provide vacuuming if dust is raised.

Avoid dust formation and dust deposit.

Information about fire and explosion protection

The product is not flammable.

Keep away from sources of ignition.

Measures for the prevention of dust and aerosols

Do not stir up solid or powder.

Measures to protect the environment

Do not give into water.

General hygiene measures

Do not smoke, drink nor eat.

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7.2 Conditions for safe storage including any incompatibilities

Requirements for storage container

Do not store together with combustible substances, reducing agents, acids and alkalis.
Keep container tightly closed.
Store dry. Keep container in a well-ventilated place.
Protect from heat / overheating.

Requirements for storage rooms and vessels

Keep only in the original container or use containers that are approved specifically for the product.

Storage class:

5.1 B Oxidizing substance: Group 2 and 3

7.3 Specific end use

Precursor for the production of chlorine dioxide in accordance with DVGW worksheet W 291, W 224 and Austrian standard M 5879-3.

Branche- und field specific guidelines: -

8. Limited and controlled exposure / Personal Protection

8.1 To control parameters

8.1.1 Limit for the exposin at workplace and/or biological limit

Workplace exposure limit (WEL) Germany

General dust limit is to be observed.

Inhalable fraction (E dust): 10 mg/m³ (Layer averaging)

Respirable fraction (A-dust): 3 mg/m³ (Layer averaging)

8.1.2 DNEL- und PNEC- value

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 in case of dust formation.

Short term: filter apparatus, filter P2.

Heat / cold protection

Protect agains frost.

Protect from heat and direct sunlight.

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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: solid, crystalline

- Color: white

Smell: odorless

pH at 20°C: 4,3 (250 g/L)

Melting point: not applicable.

Boiling point: not applicable.

Flash point: not applicable

upper/lower ignition- or explosion threshold: not applicable.

Steam pressure at 20°C: not applicable.

relative density at 20°C: 1,005 g / mL

Bulk density at 20 °C: 1200 – 1350 kg/cbm

Solubility in / Miscibility with Water 556 g/L

at 20 °C:

Self-igniting: Product is not self-igniting.

Decomposition temperature: > 180 °C

Viskosität, dynamisch bei 20 °C: nicht anwenden.

Explosive attribute: Product is not explosive.

Oxidizing attribute: yes

9.2 Other Information: -

10. Stability and reactivity

10.1 Reactivity

Reactions with combustible substances

Reactions with strong acids and alkalis

Reacts with reducing agents, heavy metals

10.2 Chemical Stability

Solid, hygroscopic

10.3 Possibility of hazardous reactions

See reactivity.

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

No formation of Oxygen.

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11. Toxicological information

11.1 Information on toxicological effects of mixtures

For mixtures the following effects:

Acute toxicity

oral LD50 700 mg / kg rat OECD 401
dermal LD50 > 10,000 mg / kg rat EPA OPP 81-2
inhalation (4 hours) aerosol LC50 > 5.1 mg / l rat OECD 403

Irritation to the skin

Irritating.

Serious eye damage / eye irritation

not determined

Sensitization of airways/ skin

May cause allergic skin reaction. (Dinatriumperoxodisulfat) May cause allergy or asthma symptoms or breathing difficulties (Dinatriumperoxodisulfat)

Germ cell mutagenicity

(IUCLID) Ames-Test: negative

Carcinogenicity

Not determined

Reproduction toxicity

Not determined

12. Ecological information

12.1 Ecotoxicity

Acute fish toxicity LC50 163 mg / L 96 h	Oncorhynchus mykiss (rainbow trout) FIFRA Guideline 72-1
Acute algae toxicity ErC50 136 mg / L 72 h	Phaeodactylum tricornutum OECD 201
Acute crustacea EC50 133 mg / L 48 h	Daphnia magna (Water flea) FIFRA Guideline 72-3
Fish toxicity NOEC 91.7 mg / L 4 d	Oncorhynchus mykiss (rainbow trout) FIFRA Guideline 72-1
Algal toxicity NOEC 32 mg / L 3 d	Phaeodactylum tricornutum OECD 201
Crustacea NOEC 67.6 mg / L 2 d	Daphnia magna (Water flea) FIFRA Guideline 72-3

12.2 Persistence and degradability

Seek consent of the competent authorities before discharging into sewage treatment plants.

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

Do not discharge product into the environment.

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13. Disposal

13.1 Waste treatment methods

Behandlung verunreinigter Verpackungen

Uncontaminated packaging may be taken for recycling.

Uncleaned packaging must be disposed of like the product.

Waste Code according to European Waste Catalogue (EWC)

060314 solid salts and solutions other than those mentioned in 060311* and 060313*.

Waste code according to Ö-Norm S2100

Waste code number: 06 03 00 - wastes from the manufacture / preparation / distribution and use of salts and their solutions, metal oxides



austria

Relevant EU or other regulations

Dispose of as hazardous waste.

For recycling consult waste disposal centers.

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

14. Transport information

14.1 UN-Number

1505

14.2 UN proper shipping name: UN 1505 sodium persulfate 5.1 III

14.3 Transport hazard class: 5.1

14.4 Packing group: III

14.5 Environmental danger

Plate environmentally hazardous substances

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

Marine Pollutant: yes / no

14.6 Special precautions for user:

Transport category (tunnel restriction code): 3 (E)

ADR LQ: 5 kg

15. Regulatory information

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

National regulations

Wassergefährdungsklasse

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 JArsSchG.

Other relevant legislation:

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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
LC ₅₀ :	Lethal concentration, 50 percent
LD ₅₀ :	Lethal dose, 50 percent

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

H272	May intensify fire; oxidizer.
H302	Harmful if swallowed.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.

In addition, see section 2.

Training for workers

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Weitere Informationen

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.