

DK-DOX® 2-Komponenten-System

Safety Data Sheet

according to Regulation (EU) 2020/878



APURA s.r.l.

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

1.1. Product identifier

Product form : Mixture
Trade name : DK-DOX® 2-Komponenten-System
DK-DOX® Chlordioxidlösung, DK-DOX® AKTIV BEV, DK-DOX® AKTIV, DK-DOX® TUBE, DK-DOX® AGRAR
Other names : E 926, Chlorine(IV) oxide
UFI : VPCX-R0YW-S00N-7JMG

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

1.2.1. Relevant identified uses

Main use category : Industrial use. Professional use. General public.
Use of the substance/mixture : Disinfectants. Preservatives.

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Manufacturer/Supplier

Apura s.r.l.

Piazza Porto, 3

25084 Gargnano BS - Italy

T +39 0365 642792

info@apura.it - www.apura.it

1.4. Emergency telephone number

| Country | Organisation/Company | Address | Emergency number |
|---------|--|---|-----------------------------------|
| Germany | Giftinformationszentrum (GIZ-Nord) Universitätsmedizin Göttingen - Georg-August-Universität | Robert-Koch Strasse 40 D-37075 Göttingen | +49 551 19240 (German/English) |

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Serious eye damage/eye irritation, Category 2 H319

Full text of H statements : see section 16

Adverse physicochemical, human health and environmental effects

Causes serious eye irritation.

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP) :



GHS07

Signal word (CLP) : Warning
Hazard statements (CLP) : H319 - Causes serious eye irritation
Precautionary statements (CLP) : P264 - Wash hands thoroughly after handling
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P337+P313 - If eye irritation persists: Get medical advice/attention

Additional information for the general public

Precautionary statements (CLP) : P101 - If medical advice is needed, have product container or label at hand
P102 - Keep out of reach of children

2.3. Other hazards

No additional information available



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SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

| Name | Product identifier | % | Classification according to Regulation (EC) No. 1272/2008 [CLP] |
|------------------------|--|--------------------------|--|
| Chlorine dioxide ... % | (CAS no) 10049-04-4 (EC no) 233-162-8 (EC index no) 017-026-01-0 (REACH no) 01-2119492305-37-xxxx | 0.3 - 0.35 0.45 - 0.5 | Acute Tox. 3 (Oral), H301 Skin Corr. 1B, H314 Aquatic Acute 1, H400 (M=10) |

| Name | Product identifier | Specific concentration limits according to Regulation (EC) No. 1272/2008 [CLP] |
|------------------------|--|---|
| Chlorine dioxide ... % | (CAS no) 10049-04-4 (EC no) 233-162-8 (EC index no) 017-026-01-0 (REACH no) 01-2119492305-37-xxxx | (0.3 ≤ C < 3) Eye Irrit. 2, H319 (1 ≤ C < 5) Skin Irrit. 2, H315 (3 ≤ C < 5) Eye Dam. 1, H318 (C ≥ 3) STOT SE 3, H335 (C ≥ 5) Skin Corr. 1B, H314 |

Full text of H-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

- First-aid measures general : Remove from exposure, if possible in fresh air and lie down the victim. Get medical advice/attention if you feel unwell. Remove contaminated clothing.
- First-aid measures after inhalation : Allow breathing of fresh air. Move the affected person to the fresh air. Make the affected person rest and keep at warm. Get medical advice/attention.
- First-aid measures after skin contact : Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention.
- First-aid measures after eye contact : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
- First-aid measures after ingestion : Rinse mouth. Drink plenty of water as a precaution. Do NOT induce vomiting. If you feel unwell, seek medical advice.

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

- Symptoms/injuries after eye contact : Causes serious eye irritation.

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

Treat symptomatically. IF SWALLOWED: gastric lavage. Treat as a burn.

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Use extinguishing agents that suit the environment. Water spray.
- Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

- Fire hazard : Heating will cause a rise in pressure with a risk of bursting.
- Hazardous decomposition products in case of fire : Carbon monoxide. Carbon dioxide. Chlorine. Chlorine dioxide. Oxygen.

5.3. Advice for firefighters

- Precautionary measures fire : Move containers away from the fire area if this can be done without risk.
- Firefighting instructions : Use water spray or fog for cooling exposed containers. Prevent fire-fighting water from entering environment.
- Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

- General measures : Provide adequate ventilation. Avoid contact with skin and eyes. Do not breathe gas/vapour/aerosol.

6.1.1. For non-emergency personnel

- Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

- Protective equipment : Use personal protective equipment as required. Use self-contained breathing apparatus.

6.2. Environmental precautions

Prevent liquid from entering sewers, watercourses, underground or low areas. Prevent entry to sewers and public waters.



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6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Wipe up with absorbent material (for example cloth). Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Keep in suitable, closed containers for disposal. Dispose of in accordance with relevant local regulations. Use neutralisation products.

6.4. Reference to other sections

Concerning personal protective equipment to use, see section 8. Concerning disposal elimination after cleaning, see section 13. Concerning conditions for handling and storage, see section 7.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Provide adequate ventilation. Do not breathe gas/vapour/aerosol. Avoid contact with skin and eyes. Keep container tightly closed. Protect from heat and direct sunlight. Avoid letting the product become dry.

Hygiene measures : Handle in accordance with good industrial hygiene and safety procedures. When using do not eat, drink or smoke. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Take off contaminated clothing and wash it before reuse.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store in original container. Store in a dry, cool and well-ventilated place. Keep container tightly closed. Protect from heat and direct sunlight. Protect against frost.

Information on mixed storage : Keep away from food, drink and animal feedingstuffs. Separated from: Acids. Reducing agents. Sulfur compounds. Combustible materials. Metals.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

| Chlorine (7782-50-5) | | |
|----------------------|--------------------------|-----------|
| EU | Local name | Chlorine |
| EU | IOELV STEL (mg/m³) | 1.5 mg/m³ |
| EU | IOELV STEL (ppm) | 0.5 ppm |
| Ireland | Local name | Chlorine |
| Ireland | OEL (15 min ref) (mg/m³) | 1.5 mg/m³ |
| Ireland | OEL (15 min ref) (ppm) | 0.5 ppm |
| Ireland | Notes (IE) | IOELV |
| Malta | Local name | Chlorine |
| Malta | OEL STEL (mg/m³) | 1.5 mg/m³ |
| Malta | OEL STEL (ppm) | 0.5 ppm |
| United Kingdom | Local name | Chlorine |
| United Kingdom | WEL STEL (mg/m³) | 1.5 mg/m³ |
| United Kingdom | WEL STEL (ppm) | 0.5 ppm |

| Chlorine dioxide ... % (10049-04-4) | | |
|-------------------------------------|---------------------------|------------------|
| Ireland | Local name | Chlorine dioxide |
| Ireland | OEL (8 hours ref) (mg/m³) | 0.3 mg/m³ |
| Ireland | OEL (8 hours ref) (ppm) | 0.1 ppm |
| Ireland | OEL (15 min ref) (mg/m³) | 0.9 mg/m³ |
| Ireland | OEL (15 min ref) (ppm) | 0.3 ppm |
| United Kingdom | Local name | Chlorine dioxide |
| United Kingdom | WEL TWA (mg/m³) | 0.28 mg/m³ |
| United Kingdom | WEL TWA (ppm) | 0.1 ppm |
| United Kingdom | WEL STEL (mg/m³) | 0.84 mg/m³ |
| United Kingdom | WEL STEL (ppm) | 0.3 ppm |

| Chlorine dioxide ... % (10049-04-4) | |
|---------------------------------------|---------------|
| DNEL/DMEL (Workers) | |
| Long-term - local effects, inhalation | 0.304 mg/m³ |
| PNEC (Water) | |
| PNEC aqua (freshwater) | 0.000021 mg/l |
| PNEC aqua (marine water) | 0.000021 mg/l |
| PNEC aqua (intermittent, freshwater) | 0.0002 mg/l |
| PNEC (STP) | |



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| Chlorine dioxide ... % (10049-04-4) | |
|-------------------------------------|----------|
| PNEC sewage treatment plant | 0.1 mg/l |

8.2. Exposure controls

Appropriate engineering controls:

Provide local exhaust or general room ventilation to minimize vapour concentrations.

Hand protection:

Wear suitable gloves. (EN 374). PVC. Polyethylene. 0.5 mm. The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

Eye protection:

Chemical goggles or safety glasses (EN 166).

Skin and body protection:

Wear suitable protective clothing.

Respiratory protection:

In case of inadequate ventilation wear respiratory protection. Breathing apparatus needed only when vapour or mist is formed. Gas mask with filter type B. (DIN EN 14387).

Environmental exposure controls:

Avoid release to the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

| | |
|--|--|
| Physical state | : Liquid |
| Colour | : Yellowish |
| Odour | : Slightly pungent. Odour threshold: ≈ 0.1 ppm |
| Melting point/freezing point | : 0 °C |
| Boiling point or initial boiling point and boiling range | : 100 °C |
| Flammability | : No data available |
| Lower and upper explosion limit | : No data available |
| Flash point | : No data available |
| Auto-ignition temperature | : No data available |
| Decomposition temperature | : > 45 °C |
| pH | : 7 |
| Kinematic viscosity | : No data available |
| Solubility | : Water: completely miscible |
| Partition coefficient n-octanol/water (log value) | : Not applicable |
| Vapour pressure | : ≈ 14 hPa (20 °C) |
| Density and/or relative density | : 1.005 g/cm ³ (20 °C) |
| Relative vapour density | : No data available |
| Particle characteristics | : Not applicable |

9.2. Other information

9.2.1. Information with regard to physical hazard classes

Explosive properties : Product is not explosive.

9.2.2. Other safety characteristics

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No dangerous reactions known under normal conditions of use.

10.2. Chemical stability

Stable under use and storage conditions as recommended in section 7.

10.3. Possibility of hazardous reactions

Corrosive to metals. Contact with acids liberates toxic gas. Avoid letting the product become dry. After evaporation of all water: Oxidising properties. Risk of bursting.



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10.4. Conditions to avoid

High temperature. Overheating. Protect from sunlight.

10.5. Incompatible materials

Strong acids. Reducing agents. Combustible materials. Metals and metallic salts.

10.6. Hazardous decomposition products

Carbon monoxide. Carbon dioxide. Chlorine. Chlorine dioxide. Oxygen.

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity : Not classified
Based on available data, the classification criteria are not met
Toxic gases may be formed (< 2.5 vol% chlorine dioxide)

Chlorine dioxide ... % (10049-04-4)

| | |
|--|--|
| LC50 inhalation rat | 32 ppmv/4h chlorine dioxide |
| Skin corrosion/irritation | : Not classified Based on available data, the classification criteria are not met |
| Serious eye damage/irritation | : Causes serious eye irritation. |
| Respiratory or skin sensitisation | : Not classified Based on available data, the classification criteria are not met |
| Germ cell mutagenicity | : Not classified Based on available data, the classification criteria are not met |
| Carcinogenicity | : Not classified Based on available data, the classification criteria are not met |
| Reproductive toxicity | : Not classified Based on available data, the classification criteria are not met |
| Specific target organ toxicity (single exposure) | : Not classified Based on available data, the classification criteria are not met |
| Specific target organ toxicity (repeated exposure) | : Not classified Based on available data, the classification criteria are not met |
| Aspiration hazard | : Not classified Based on available data, the classification criteria are not met |

11.2. Information on other hazards

Potential adverse human health effects and symptoms : Based on available data, the classification criteria are not met

SECTION 12: Ecological information

12.1. Toxicity

Acute aquatic toxicity : Not classified
Chronic aquatic toxicity : Not classified

Chlorine dioxide ... % (10049-04-4)

| | |
|---------------------|--|
| LC50 fish | 0.021 mg/l 96 h, Brachydanio rerio |
| EC50 daphnia | 0.063 mg/l 48 h, Daphnia magna |
| EC50 algae | 1.096 mg/l 72 h, Selenastrum capricornutum |
| NOEC daphnia | 0.015 mg/l 22 d, Daphnia magna |
| NOEC algae | 0.02 mg/l 72 d, Selenastrum capricornutum |
| EC50 microorganisms | 10.7 mg/l 3 h, activated sludge (OECD 209) |

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

No additional information available

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.

12.6. Endocrine disrupting properties

No additional information available



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12.7. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

| | |
|--|--|
| Regional legislation (waste) | : Dispose in a safe manner in accordance with local/national regulations. |
| Waste treatment methods | : Do not dispose of with domestic waste. Do not empty into drains. Avoid letting the product become dry. |
| Product/Packaging disposal recommendations | : When totally empty, containers are recyclable like any other packing. |
| European List of Waste (LoW) code | : 15 00 00 - WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED 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 specified 06 13 01* - inorganic plant protection products, wood-preserving agents and other biocides 18 01 06* - chemicals consisting of or containing dangerous substances |
| Waste code number | : The valid EWC waste code numbers are source related. The manufacturer is therefore unable to specify EWC waste codes for the articles or products used in the various sectors. The EWC codes listed are intended as a recommendation for users. |

SECTION 14: Transport information

In accordance with IATA / IMDG / ADR

14.1. UN number or ID number

| | |
|---------------|------------------|
| UN-No. (ADR) | : Not applicable |
| UN-No. (IMDG) | : Not applicable |
| UN-No. (IATA) | : Not applicable |

14.2. UN proper shipping name

| | |
|-----------------------------|------------------|
| Proper Shipping Name (ADR) | : Not applicable |
| Proper Shipping Name (IMDG) | : Not applicable |
| Proper Shipping Name (IATA) | : Not applicable |

14.3. Transport hazard class(es)

ADR

| | |
|----------------------------------|------------------|
| Transport hazard class(es) (ADR) | : Not applicable |
|----------------------------------|------------------|

IMDG

| | |
|-----------------------------------|------------------|
| Transport hazard class(es) (IMDG) | : Not applicable |
|-----------------------------------|------------------|

IATA

| | |
|-----------------------------------|------------------|
| Transport hazard class(es) (IATA) | : Not applicable |
|-----------------------------------|------------------|

14.4. Packing group

| | |
|----------------------|------------------|
| Packing group (ADR) | : Not applicable |
| Packing group (IMDG) | : Not applicable |
| Packing group (IATA) | : Not applicable |

14.5. Environmental hazards

| | |
|-------------------------------|--|
| Dangerous for the environment | : No |
| Marine pollutant | : No |
| Other information | : No supplementary information available |

14.6. Special precautions for user

- Overland transport

Not applicable

- Transport by sea

Not applicable

- Air transport

Not applicable



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14.7. Maritime transport in bulk according to IMO instruments

Not applicable

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

Contains no substance on the REACH candidate list

Contains no REACH Annex XIV substances

15.1.2. National regulations

No additional information available

15.2. Chemical safety assessment

Chemical safety assessments for substances in this mixture were not carried out

SECTION 16: Other information

Data sources : REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

Changes compared to the previous version : Section 1.1: Product identifier
Section 8.1: Control parameters

Classification and procedure used to derive the classification of mixtures according to Regulation (EC) No. 1272/2008 [CLP]:

| | |
|---|--------------------|
| Serious eye damage/eye irritation, Category 2, H319 | Calculation method |
|---|--------------------|

Abbreviations and acronyms:

| | |
|--------|---|
| ADR | European Agreement concerning the International Carriage of Dangerous Goods by Road |
| CLP | Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures |
| DMEL | Derived Minimal Effect Level |
| DNEL | Derived No-Effect Level |
| EC50 | The effective concentration of substance that causes 50% of the maximum response (Median Effective Concentration) |
| IATA | International Air Transport Association |
| IMDG | "International Maritime Dangerous Goods Code" for the transport of dangerous goods by sea |
| LC50 | Lethal Concentration to 50 % of a test population (Median Lethal Concentration) |
| LD50 | Lethal Dose to 50% of a test population (Median Lethal Dose) |
| NOEC/L | No Observed Effect Concentration/Level |
| OECD | Organisation for Economic Cooperation and Development |
| PBT | Persistent, Bioaccumulative and Toxic substance |
| PNEC | Predicted No-Effect Concentration |
| REACH | Regulation (EC) No 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals |
| SDS | Safety Data Sheet |
| STP | Sewage Treatment Plant |
| UFI | Unique Formula Identifier |
| vPvB | Very Persistent and Very Bioaccumulative |

Full text of H- and EUH-statements:

| | |
|---------------------|--|
| Acute Tox. 3 (Oral) | Acute toxicity (oral), Category 3 |
| Aquatic Acute 1 | Hazardous to the aquatic environment — Acute Hazard, Category 1 |
| Eye Dam. 1 | Serious eye damage/eye irritation, Category 1 |
| Eye Irrit. 2 | Serious eye damage/eye irritation, Category 2 |
| Skin Corr. 1B | Skin corrosion/irritation, Category 1B |
| Skin Irrit. 2 | Skin corrosion/irritation, Category 2 |
| STOT SE 3 | Specific target organ toxicity - Single exposure, Category 3, Respiratory tract irritation |
| H301 | Toxic if swallowed |
| H314 | Causes severe skin burns and eye damage |
| H315 | Causes skin irritation |
| H318 | Causes serious eye damage |
| H319 | Causes serious eye irritation |
| H335 | May cause respiratory irritation |
| H400 | Very toxic to aquatic life |

SDS EU (REACH Annex II)

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

