

Safety Data Sheet

According to Regulation (EC) No 1907/2006 (REACH)

Trade name: FreeBact Water Drink, FreeBact Surface On the Go, FreeBact Surface Veterinary, FreeBact Surface Caravan, FreeBact SanDes

Version: 6.0 / EN

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Revision date: 13.09.2023

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

1.1 Product identifier:

1-Component disinfectant system, Stabilized Chlorine Dioxide.

Trade name / designation: FreeBact Water Drink, FreeBact Surface On the Go, Freebact Surface Veterinary, FreeBact Surface Caravan, Freebact SanDes

Other means of identification:

Disinfection product

Hazard components for labeling: None

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

Not approved for personal hygiene (PT-1).

1.3 Details of the supplier of the safety data sheet:

Supplier:

Name:	Xinix Global AB
Address:	Ritarslingan 11, 187 66 Täby, Sweden
Tel.:	+46 10 489 11 40
E-Mail (competent person)	robert.heinrich@xinix.se

1.4 EMERGENCY TELEPHONE NUMBER:

Sweden – 112 ask for poison information center.

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture:

The product is not classified according to the Regulation (EC) No 1272/2008

Additional information: None

2.2 Label elements:

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

Hazard pictograms: Not classified according to Regulation (EC) No 1272/2008 [CLP/GHS]

Signal word: Not classified

Hazard statements: Not classified

Precautionary statements: Not classified

Supplemental Hazard information: None

Special rules for supplemental label elements for certain mixtures: None

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Additional labelling: Not classified

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.1 Substances

Substance name: Chlorine dioxide

CAS No:
Chlorine dioxide 10049-04-4

EC No:
Chlorine dioxide 233-162-8

REACH No:

Purity: None provided
Synonyms: None
Stabilizers: None
Hazard impurities: None

3.2 Mixtures

Description of the mixture: Chlorine dioxide solution
Hazardous ingredients: None
Additional information: None

SECTION 4: First aid measures

4.1 Description of first aid measures

General information:

Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

Following inhalation:

Ensure access to fresh air if chlorine dioxide is inhaled. Provide the injured party with oxygen in the event of severe breathing difficulties and seek immediate hospital treatment.

Following skin contact:

Wash off immediately with soap and plenty of water. Seek medical advice if irritation develops. Remove and wash contaminated clothing before re-use.

Following eye contact:

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison centre or doctor/physician.

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Following ingestion:

Immediately rinse mouth with water. If swallowed, do NOT induce vomiting. Give a glass of water. Seek immediate medical assistance.

Self-protection of the first aider: Pay attention to self-protection!

4.2 Most important symptoms and effects, both acute and delayed

No further relevant information available.

4.3 Indication of any immediate medical attention and special treatment needed

Indication of immediate medical attention and special treatment needed:
Treat symptomatically. Can cause burns.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

Not combustible, however, if material is involved in a fire, use: Fine water spray, normal foam, dry agent (carbon dioxide, dry chemical powder).

Unsuitable extinguishing media

Not combustible. Apply suitable fire fighting measures to the environment.

5.2 Special hazards arising from the substance or mixture

Decomposes on heating emitting toxic fumes, including those of chlorine. May produce chlorine dioxide gas, if heated.

Hazardous combustion products.

Chlorine, carbon monoxide, carbon dioxide, smoke.

5.3 Advice for fire-fighters

Decomposes on heating emitting toxic fumes, including those of chlorine, chlorine dioxide. Fire fighters to wear self-contained breathing apparatus and suitable protective clothing if risk of exposure to products of decomposition.

Additional information:

In case of fire use respirator mask (Filter type B and P). Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. In the event of fire and/or explosion do not breathe fumes.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel.

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Protective equipment:

Gloves. Safety glasses. Protective clothing.

Emergency procedures:

Clear area of all unprotected personnel. If contamination of sewers or waterways has occurred advise local emergency services.

For emergency responders.

Personal protective equipment:

Equip cleanup crew with proper protection. Fire fighters to wear self-contained breathing apparatus and suitable protective clothing if risk of exposure to products of decomposition.

6.2 Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3 Methods and material for containment and cleaning up

Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials.

6.4 Reference to other sections

Waste disposal information: section 13.

Transport information: section 14.

Hazardous combustion products: section 5.2.

Additional information: None

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Protective measures.

Advice on safe handling:

Avoid inhalation and skin contact. Ensure necessary ventilation in work areas in which chlorine dioxide solution is being used. Use local exhaust ventilation at point of vapor emissions. Ensure that gas masks/gas filters are available. Ensure that emergency shower facilities are available.

Advice on general occupational hygiene:

Do not smoke, eat or drink when handling the product. Avoid the formation of sparks. Maintain storage and work areas totally clean, devoid of any trace of foreign or incompatible products. Before handling the product, make sure that the containers, vessels and tanks to be used are clean, dry and appropriate for the intended use. Do not return the product (nor samples) to containers or tanks (risk of decomposition). Avoid mixing with incompatible products (acids, acid materials, combustible materials, oils, greases, etc). Containers shall be properly closed and appropriately labeled. Avoid dust formation during handling. Avoid contact with the skin, eyes and clothing. Always use the recommended protective clothing.

7.2 Conditions for safe storage, including any incompatibilities.

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COUNCIL DIRECTIVE 96/82/EC of 9 December 1996 on the control of major-accident hazards involving dangerous substances.

Conditions for safe storage:

Keep out of reach of children. Keep container tightly closed and dry. Store in suitable labeled containers.

Keep the product separated from flammables, combustibles, acids and organics. Avoid direct sunlight.

SPECIFIC USES:

In the generation of chlorine dioxide, its concentration shall be controlled, as it is explosive at concentrations greater than 8% by volume in air.

Suitable material:

Keep in properly labeled original containers.

Unsuitable material:

Iron, copper and alloys, paper, tissue.

Storage class: 12 - Non-flammable liquids

Materials to avoid:

Flammable materials, acids, bases, reducing agents, metals salts.

Further information on storage conditions:

For long storage life store in refrigerator

7.3 Specific end uses

Recommendations:

Use according to the specifications in the technical datasheet.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

Limit value type (country of origin)	Exposure limits
Chlorine dioxide, CAS: 10049-04-4	
Finland (HTP)	0.28 mg/m ³ / 0.1 ppm (8 hr), 0.84 mg/m ³ / 0.3 ppm (15 min)
France (VLR)	0.8 mg/m ³ / 0.1 ml/m ³ (TRGS 900 limit)
Italy (ACGIH)	0.1 ppm (8-hr TWA), 0.3 ppm (15 min STEL)
Netherlands (MAC)	0.3 mg/m ³ / 0.1 ppm (STEL)
Norway	0.3 mg/m ³ / 0.1 ppm (TLV)

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Spain	0.28 mg/m ³ / 0.1 ppm (8 hr VLA-ED), 0.84 mg/m ³ / 0.3 ppm (15-min VLA_EC)
Sweden	0.3 mg/m ³ / 0.1 ppm (NGV), 0.8 mg/m ³ / 0.3 ppm (TGV)
UK (WEL)	0.28 mg/m ³ / 0.1 ppm (8-hr TWA), 0.84 mg/m ³ / 0.3 ppm (STEL)

DNEL/PNEC-values

Predicted No Effect Concentration (PNEC)

Chlorine dioxide, CAS: 10049-04-4	0,021 µg/L	0,021 µg/L
DNEL values		
Worker		
	Long term	Short term
Chlorine dioxide, CAS: 10049-04-4	0.304 mg/m ³ (inhalation)	0.304 mg/m ³ (inhalation)
General population		
	Long term	Short term
Chlorine dioxide, CAS: 10049-04-4	No hazard identified (inhalation)	No hazard identified (inhalation)

Risk management measures according to used control banding approach

8.2 Exposure controls

Never use contact lenses when working with this substance. Eye protection should be worn if there is any danger of direct exposure or splashing. Use protective gloves of butyl rubber, nitrile rubber or get advice from an occupational medical expert about alternative materials. Show this safety data sheet. Work without protective gloves should only occur when very small amounts are handled.

Appropriate engineering controls.

Personal protective equipment.

Eye / Face protection.

Safety goggles or safety visor according to DIN EN ISO 166. Eye wash station needed.



Skin protection

Safety gloves made of butyl rubber, neoprene or PVC.

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Thermal hazards.

Do not expose to heat or flames. Product may produce hazardous gases. Product may decompose in heat. Product may violently react with flammable substances.

8.2.1 Environmental exposure controls

Avoid contaminating waterways.

SECTION 9. Physical and chemical properties

9.1 Information on basic physical and chemical properties Appearance

	Value	Conditions
Color	Yellow	
Odor:	Pungent	
Physical state:	Liquid	
pH	> 1	
Melting point/freezing point	100 °C	
Initial boiling point/boiling range	0 °C	
Flash point	Not applicable	
Evaporation rate	Not applicable	
Flammability (solid, gas)	Not applicable	
Upper/lower flammability or explosive limits	Not applicable	
Upper explosive limits		
Lower explosive limits		
Octanol/water partition (KOW)	No data available	
Vapour pressure	Not applicable	
Vapour density	1,6	0 °C, ClO ₂
Relative density	2,3	ClO ₂ , (air = 1)
Solubility in water	Soluble	

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Auto-ignition temperature	Not applicable	
Decomposition temperature	No data available	
Viscosity		
Viscosity, dynamic		
Viscosity, cinematic		
Explosive properties	Not explosive	

9.2 Other information

Physical hazards:

The material itself is difficult to burn, but if contaminated by combustible materials it will accelerate their burning. With certain combustible materials it will form explosive mixtures.

Oxidizing liquids

Safety characteristics:

Assessment / Classification:

Conclusive but not sufficient for classification.

SECTION 10: Stability and reactivity

These results are inconclusive with regard to Regulation (EC) No.1272/2008 (CLP) criteria.

10.1 Reactivity

Reacts with organic materials. Incompatible with other combustible materials, organic matters, and solvents. The gas and liquid are violently decomposed by organic materials. The gas will decompose at temperatures below the boiling point of water. Chlorine dioxide does not react with water to any significant extent. It remains a true gas dissolved in solution.

10.2 Chemical stability

The product is stable under the specified conditions.

Under low concentrations, such as those encountered in potable water, cooling systems, or sanitation applications, ClO₂ is less corrosive than other oxidants; and in such systems, corrosion due to ClO₂ is not generally a consideration.

10.3 Possibility of hazardous reactions

Reacts with bases. Reacts with acids. Reacts with reducing agents.

10.4 Conditions to avoid

Avoid exposure to direct sunlight. Avoid exposure to heat. Protect the product from evaporation.

10.5 Incompatible materials

Reducing agents, cyanides, alkaline compounds, flammable compounds, metal salts, oxidizing agents, ammonium compounds, powdered metals, chlorine and chlorine compounds, hypochlorites (bleach), sulfur and sulfite compounds, phosphorus.

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Colored textiles may be bleached.

10.6 Hazardous decomposition products

Chlorine, chlorates

SECTION 11: Toxicological information

Toxicokinetics, metabolism and distribution.

11.1 Information on toxicological effects

Acute toxicity

Practical experience / human evidence

Animal data

	Effect dose / - concentration	Value	Species	Method	Comment
Chlorine dioxide					
Acute oral toxicity	LD50	93,86 mg/kg bw	Rat	OECD Guideline 401 (Acute Oral Toxicity)	0,2 % sol., calculated
Acute inhalation toxicity	LD50	89 mg/m ³ air	Rat	EU Method B.2 (Acute Toxicity (Inhalation))	4 h, calculated

Other information

Assessment / Classification:

Ingestion may cause vomiting, stomach ache and possibly severe shock.

Skin corrosion/irritation.

Practical experience / human evidence:

This product may irritate eyes, skin, mucous membranes and respiratory tract.

Irritation of the mouth, pharynx and / or respiratory system may occur through inhalation or ingestion.

Sensitization to the respiratory tract

Assessment / Classification: Not applicable.

Skin sensitization

Assessment / Classification

Based on available data, no adverse effect observed. [OECD Guideline 406 (Skin Sensitization)]

CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)

Assessment / Classification

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Based on the available results, the product is not classified for carcinogenicity.

Reproductive toxicity

Assessment / Classification

Based on the available data on effects on fertility and developmental toxicity, the substance is not classified.

Assessment / Classification

Based on available data, the classification criteria are not met.

Aspiration hazard

Practical experience / human evidence

Based on available data, the classification criteria are not met. Experimental data viscosity data: see section 9.

Assessment / Classification

Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

12.1 Toxicity

Aquatic toxicity

Acute (short-term) fish toxicity

	Effect dose /- concentration	Value	Test duration	Species	Method	Remark
Chlorine dioxide	LC50	105 mg/l	96 h	Cyprinodon variegatus	EPA OPP 72-1 (Fish Acute Toxicity Test)	

Aquatic toxicity

Chronic (long-term) fish toxicity

	Effect dose /- concentration	Value	Test duration	Species	Method	Remark
Chlorine dioxide	NOEC	>= 500 mg/l	36 d	Danio rerio	OECD Guideline 210 (Fish, Early-Life Stage Toxicity Test)	(sodium chlorite)

Aquatic toxicity

Acute (short-term) toxicity to crustacea

	Effect dose/- concentration	Value	Test duration	Species	Method	Remark
Chlorine dioxide	EC50	> 1000 mg/l	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilization Test)	mobilization

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Acute (short-term) toxicity to algae and cyanobacteria

	Effect dose/- concentration	Value	Test duration	Species	Method	Remark
Chlorine dioxide	EC50	1 mg/l	96 h	Pseudokirchneriella subcapitata	EPA OPP 122-2 (Algal Toxicity, Tiers I and II)	inhibition of growth rate

Terrestrial toxicity Soil invertebrates:

Study scientifically not necessary / other information available.

Terrestrial plants: study scientifically not necessary / other information available

Sediment toxicity (long-term) study scientifically not necessary / other information available

12.2 Persistence and degradability

Biodegradation

Assessment / Classification No data available.

12.3 Bioaccumulative potential

No data available.

Assessment / Classification

Accumulation in organisms is not expected.

12.4 Mobility in soil

Assessment / Classification

Study scientifically not necessary

12.5 Results of PBT and vPvB assessment

This substance does not meet the PBT/vPvB criteria of REACH, annex XIII.

12.6 Other adverse effects

No adverse effects

Additional ecotoxicological information: None

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Directive 2008/98/EC (Waste Framework Directive)

Recommended LoW-code: 06 07 04 – Waste from inorganic chemical processes; waste from halogen containing processes; solutions and acids.

Dispose in a safe manner in accordance with local/national regulations.

Avoid release into the environment.

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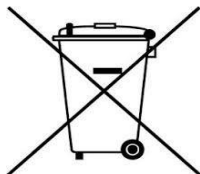
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Don't dispose into household waste.

Additional information.

Disposal of the product, contaminated packaging and waste. Spent containers shall be rinsed to remove all remaining product. Dilute the product with abundant water, avoiding the presence of solids which it may ignite (clothing, paper, wood, etc). Take into account considerations stated in previous sections regarding incompatibilities. Consult applicable European Community, National and local provisions relative to the appropriate elimination of this material and empty containers thereof.

SECTION 14: Transport information (ADR/RID, IMDG, IATA)

FreeBact 1-component product	
UN No.	Not classified as dangerous
UN Proper shipping name	Not applicable
Transport hazard class(es)	Not applicable
Hazard label(s)	Not applicable
Packing group	
Water hazard class	I
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)	Not applicable
Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable
Tunnel Restriction Code	Not applicable

14.1 Special precautions for user

Shipping of product only in original packages.

SECTION 15: Regulatory information

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

EU regulations

Authorizations and/or restrictions on use

This product is controlled under the Seveso III Directive.

Seveso category	E1
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Other EU regulations: None

Information according to 1999/13/EC about limitation of emissions of volatile organic compounds (VOC-guideline). National regulations.

15.2 Chemical Safety Assessment

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Assessment and chemical safety report in accordance with 1907/2006 Annex I has not yet been performed.

SECTION 16: Other information

16.1 Indication of changes

16.2 Abbreviations and acronyms

ADR/RDI	Accord européen relatif au transport international des marchandises dangereuses par route
ADN	Accord européen relatif au transport international des marchandises dangereuses par voies de navigation intérieure
Bw	body weight
CLP	Classification, Labeling & Packaging
DNEL	Derived No Effect Level
EU	European Union
IMDG	International Maritime Code for Dangerous Goods
IATA	International Air Transport Association
PBT	Persistent, Bioaccumulative and. Toxic chemicals
vPvB	Very Persistent and very. Bioaccumulative
VOC	Volatile Organic Compound
PNEC	Predicted No Effect Concentration
1272/2008	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
EH40/2005	EH40/2005 Workplace exposure limits 89/391 COUNCIL DIRECTIVE (89/391/EEC of 12 June 1989 on the introduction of measures to encourage improvements in the safety and health of workers at work
2006/12	DIRECTIVE 2006/12/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 5 April 2006 on waste
1907/2006	REGULATION (EC) No 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC

16.3 Key literature references and sources for data

Classification for mixtures and used evaluation method according to regulation (EC) 1207/2008 [CLP] see section 2.1. (classification)

16.4 Relevant R-, H- and EUH-phrases (number and full text) see section 2.2.

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16.5 Training advice

Further information None

This safety data sheet has been prepared by Xinix Global AB, Täby, Sweden.
Annex to extended safety data sheet (ext. SDS)