



2023/2704

30.11.2023

COMMISSION IMPLEMENTING REGULATION (EU) 2023/2704
of 28 November 2023
granting a Union authorisation for the single biocidal product ‘GHC Chlor’
(Text with EEA relevance)

THE EUROPEAN COMMISSION,

Having regard to the Treaty on the Functioning of the European Union,

Having regard to Regulation (EU) No 528/2012 of the European Parliament and of the Council of 22 May 2012 concerning the making available on the market and use of biocidal products ⁽¹⁾, and in particular Article 44(5), first subparagraph, thereof,

Whereas:

- (1) On 10 December 2018, GHC Gerling, Holz & Co. Handels GmbH submitted to the European Chemicals Agency (‘the Agency’) an application in accordance with Article 43(1) of Regulation (EU) No 528/2012 and Article 4 of Commission Implementing Regulation (EU) No 414/2013 ⁽²⁾ for authorisation of the same single biocidal product, as referred to in Article 1 of Implementing Regulation (EU) No 414/2013, named ‘GHC Chlor’ of product-types 2 (disinfectants and algaecides not intended for direct application to humans or animals) and 5 (drinking water) as described in Annex V to Regulation (EU) No 528/2012. The application was recorded under case number BC-EN045705-33 in the Register for Biocidal Products (‘the Register’). The application also indicated the application number of the related reference single biocidal product ‘Arche Chlorine’, recorded in the Register under case number BC-UQ045679-98.
- (2) ‘GHC Chlor’ contains active chlorine released from chlorine as the active substance, included in the Union list of approved active substances referred to in Article 9(2) of Regulation (EU) No 528/2012, for product-types 2 and 5.
- (3) On 3 August 2021, the Agency submitted to the Commission its opinion ⁽³⁾ and the draft summary of the biocidal product characteristics (‘SPC’) of ‘GHC Chlor’ in accordance with Article 6(1) and (2) of Implementing Regulation (EU) No 414/2013.
- (4) In its opinion, the Agency concludes that the differences, proposed by GHC Gerling, Holz & Co. Handels GmbH, between the same biocidal product and the related reference biocidal product are limited to information which can be the subject of an administrative change in accordance with Article 11 of Commission Implementing Regulation (EU) No 354/2013 ⁽⁴⁾, and that based on the assessment of Arche Chlorine and subject to compliance with the draft SPC, the same single biocidal product meets the conditions laid down in Article 19(1) of Regulation (EU) No 528/2012.
- (5) On 15 June 2023, the Agency transmitted to the Commission the draft SPC in all the official languages of the Union in accordance with Article 44(4) of Regulation (EU) No 528/2012.

⁽¹⁾ OJ L 167, 27.6.2012, p. 1.

⁽²⁾ Commission Implementing Regulation (EU) No 414/2013 of 6 May 2013 specifying a procedure for the authorisation of same biocidal products in accordance with Regulation (EU) No 528/2012 of the European Parliament and of the Council (OJ L 125, 7.5.2013, p. 4).

⁽³⁾ ECHA opinion of 3 August 2021 on the Union authorisation of the same single biocidal product ‘GHC Chlor’ (<https://echa.europa.eu/opinions-on-union-authorisation>).

⁽⁴⁾ Commission Implementing Regulation (EU) No 354/2013 of 18 April 2013 on changes of biocidal products authorised in accordance with Regulation (EU) No 528/2012 of the European Parliament and of the Council (OJ L 109, 19.4.2013, p. 4).

- (6) The Commission also considers that the request made by Germany to adjust the conditions of the Union authorisation of the single biocidal product 'Arche Chlorine' for its territory in accordance with Article 44(5), second subparagraph, of Regulation (EU) No 528/2012 also applies for the uses 2, 3 and 4 of 'GHC Chlor'. This adjustment is justified in recitals 7 to 9 of Commission Implementing Regulation (EU) 2023/754 ⁽³⁾ granting a Union authorisation for the single biocidal product 'Arche Chlorine' in accordance with Regulation (EU) No 528/2012.
- (7) The Commission concurs with the opinion of the Agency and considers it therefore appropriate to grant a Union authorisation for the same single biocidal product 'GHC Chlor' with the adjustments of the SPC as requested by Germany for its territory for the uses 2, 3 and 4 in accordance with Article 44(5), second subparagraph, of Regulation (EU) No 528/2012.
- (8) The expiry date of this authorisation is aligned to the expiry date of the reference single biocidal product 'Arche Chlorine'.
- (9) The measures provided for in this Regulation are in accordance with the opinion of the Standing Committee on Biocidal Products,

HAS ADOPTED THIS REGULATION:

Article 1

A Union authorisation with authorisation number EU-0027044-0000 is granted to GHC Gerling, Holz & Co. Handels GmbH for the making available on the market and use of the same single biocidal product 'GHC Chlor' in accordance with the summary of the biocidal product characteristics set out in the Annex.

For the territory of the Federal Republic of Germany, adjustments to the terms and conditions apply for the uses 2, 3 and 4 of 'GHC Chlor' as laid down in the summary of product characteristics in the Annex.

The Union authorisation is valid from 20 December 2023 until 30 April 2033.

Article 2

This Regulation shall enter into force on the twentieth day following that of its publication in the *Official Journal of the European Union*.

This Regulation shall be binding in its entirety and directly applicable in all Member States.

Done at Brussels, 28 November 2023.

For the Commission
The President
Ursula VON DER LEYEN

⁽³⁾ Commission Implementing Regulation (EU) 2023/754 of 12 April 2023 granting a Union authorisation for the single biocidal product 'Arche Chlorine' in accordance with Regulation (EU) No 528/2012 of the European Parliament and of the Council (OJ L 100, 13.4.2023, p. 83).

ANNEX

Summary of product characteristics for a biocidal product

GHC Chlor

Product type 2 – Disinfectants and algacides not intended for direct application to humans or animals
(Disinfectants)

Product type 5 – Drinking water (Disinfectants)

Authorisation number: EU-0027044-0000

R4BP asset number: EU-0027044-0000

1. ADMINISTRATIVE INFORMATION

1.1. Trade name(s) of the product

Trade name(s)	Chlor GHC Chlor Chlorine GHC Chlorine Chlore GHC Chlore хлор GHC хлор Klor GHC Klor χλώριο GHC χλώριο Chloor GHC Chloor Chlor kapalný GHC Chlor kapalný Kloor GHC Kloor Kloori GHC Kloori Klór GHC Klór Cloro GHC Cloro Hlors GHC Hlors Chloras GHC Chloras Klorur GHC Klorur Clor GHC Clor Chlór GHC Chlór BOC Chlorine Chlor flüssig > 99,8 % CHLORGAS FLUESSIG (99,8 %) trave Chlor
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1.2. **Authorisation holder**

Name and address of the authorisation holder	Name	GHC Gerling, Holz & Co. Handels GmbH
	Address	Ruhrstraße 113, 22761 Hamburg, Germany
Authorisation number	EU-0027044-0000	
R4BP asset number	EU-0027044-0000	
Date of the authorisation	20 December 2023	
Expiry date of the authorisation	30 April 2033	

1.3. **Manufacturer(s) of the product**

Name of manufacturer	GHC Gerling, Holz & Co. Handels GmbH
Address of manufacturer	Ruhrstraße 113, 22761 Hamburg, Germany
Location of manufacturing sites	Ruhrstraße 113, 22761 Hamburg, Germany Kinzigheimer Weg 109, 63450 Hanau, Germany Siemensstraße 20, 41542 Dormagen, Germany Breitenau 15, 85232 Bergkirchen, Germany Löbejüner Straße 21, 06193 Wettin-Löbejün OT Merbit, Germany Waldstraße 13, 64584 Biebesheim, Germany Am Haupttor/Bau 3651, 06237 Leuna, Germany
Name of manufacturer	GHC Invest s.r.o.
Address of manufacturer	Korunovační 103/6, 170 00 Praha 7, Czech Republic
Location of manufacturing sites	Korunovační 103/6, 170 00 Praha 7, Czech Republic Tovární 157, 277 11 Neratovice, Czech Republic Na Letišti 415/104, 750 02 Bochoř okres Přerov, Czech Republic Minická 635, 278 01 Kralupy nad Vltavou, Czech Republic

1.4. **Manufacturer(s) of the active substance(s)**

Active substance	Active chlorine released from chlorine
Name of manufacturer	Nobian Industrial Chemicals BV
Address of manufacturer	Velperweg 76, 6824 BM Arnhem, Netherlands
Location of manufacturing sites	Hauptstraße 47, 49479 Ibbenbüren, Germany Elektrolysestr. 1, 06749 Bitterfeld, Germany Industriepark Höchst Geb. B598, 65926 Frankfurt am Main Germany
Active substance	Active chlorine released from chlorine
Name of manufacturer	Arkema France
Address of manufacturer	85 route Nationale, 38560 Jarrie, France
Location of manufacturing sites	85 route Nationale, 38560 Jarrie, France

Active substance	Active chlorine released from chlorine
Name of manufacturer	CABB GmbH
Address of manufacturer	Ludwig Hermann Str. 100, 86368 Gersthofen, Germany
Location of manufacturing sites	Ludwig Hermann Str. 100, 86368 Gersthofen, Germany

Active substance	Active chlorine released from chlorine
Name of manufacturer	Donau Chemie AG
Address of manufacturer	Klagenfurter Str. 17, 9371 Brückl, Austria
Location of manufacturing sites	Klagenfurter Str. 17, 9371 Brückl, Austria

Active substance	Active chlorine released from chlorine
Name of manufacturer	Inovyn Chlorvinyls Limited
Address of manufacturer	South Parade WA7, 4JE Runcorn, United Kingdom
Location of manufacturing sites	South Parade WA7, 4JE Runcorn, United Kingdom

Active substance	Active chlorine released from chlorine
Name of manufacturer	Métaux Spéciaux (MSSA S.A.S.)
Address of manufacturer	111 rue de la Volta, 73600 Saint-Marcel, France
Location of manufacturing sites	111 rue de la Volta, 73600 Saint-Marcel, France

Active substance	Active chlorine released from chlorine
Name of manufacturer	PCC Rokita SA
Address of manufacturer	ul. Sienkiewicza 4, 56-120 Brzeg Dolny, Poland
Location of manufacturing sites	ul. Sienkiewicza 4, 56-120 Brzeg Dolny, Poland

Active substance	Active chlorine released from chlorine
Name of manufacturer	PPC SAS
Address of manufacturer	95 rue du Général de Gaulle, 68800 Thann Cedex, France
Location of manufacturing sites	95 rue du Général de Gaulle, 68800 Thann Cedex, France

Active substance	Active chlorine released from chlorine
Name of manufacturer	Vencorex France SAS
Address of manufacturer	Rue Lavoisier, 38800 Le Pont de Claix, France
Location of manufacturing sites	Rue Lavoisier, 38800 Le Pont de Claix, France

2. PRODUCT COMPOSITION AND FORMULATION

2.1. Qualitative and quantitative information on the composition of the product

Common name	IUPAC name	Function	CAS number	EC number	Content (%)
Active chlorine released from chlorine		Active Substance			100,0
chlorine	chlorine	Non-active substance	7782-50-5	231-959-5	100,0

2.2. Type of formulation

GA – Gas

3. HAZARD AND PRECAUTIONARY STATEMENTS

Hazard statements	May cause or intensify fire; oxidiser Causes skin irritation. Causes serious eye irritation. Toxic if inhaled. May cause respiratory irritation. Very toxic to aquatic life. Contains gas under pressure; may explode if heated
Precautionary statements	Keep away from clothing and other combustible materials. Do not breathe gas. Avoid release to the environment. Wear protective gloves. Wear protective clothing. Wear eye protection. Wear face protection. IF INHALED: Remove person to fresh air and keep comfortable for breathing. IF IN EYES: Rinse cautiously with water for several minutes.Remove contact lenses, if present and easy to do. Continue rinsing. Collect spillage. Store in a well-ventilated place.Keep container tightly closed. Store locked up. Protect from sunlight.Store in a well-ventilated place. In case of fire: Stop leak if safe to do so. Dispose of contents to local regulation. Keep valves and fittings free from oil and grease. Call a doctor if you feel unwell. Avoid breathing gas. Wash hands thoroughly after handling. Use only outdoors or in a well-ventilated area. IF ON SKIN: Wash with plenty of water. Call a Poison center/doctor. Specific treatment (see reference to supplemental first aid instruction on this label). If skin irritation occurs:Get medical attention. If eye irritation persists:Get medical attention. Take off contaminated clothing.And wash it before reuse.

4. AUTHORISED USE(S)

4.1. Use description

Table 1

Use # 1 – Disinfection of waste water after the waste water plant

Product type	PT02 – Disinfectants and algaecides not intended for direct application to humans or animals (Disinfectants)
Where relevant, an exact description of the authorised use	/
Target organism(s) (including development stage)	Scientific name: bacteria Common name: Bacteria Development stage: Scientific name: viruses Common name: Viruses Development stage:
Field(s) of use	Indoor Outdoor Disinfection of waste water after the waste water plant, by shock dosing (in case of contamination).
Application method(s)	Method: Closed system Detailed description: Automated dosing system.
Application rate(s) and frequency	Application Rate: Shock dosing: 477 mg/l active chlorine (AC) under dirty conditions. Dilution (%): – Number and timing of application: Contact time: 30 minutes
Category(ies) of users	Industrial Professional
Pack sizes and packaging material	Cylinder: 4,8-140 l (6-175 kg Cl ₂) Drum: 400-1 000 l (500-1 250 kg Cl ₂) Railway tanks: 43 000-44 000 l (53 750-55 000 kg Cl ₂) Carbon/stainless steel

4.1.1. Use-specific instructions for use

Connect the chlorine cylinder or drum to the automated dosing system, closed dosing system. Set up the parameters of the system to obtain an active chlorine concentration in the water according to the application rate indicated above.

4.1.2. Use-specific risk mitigation measures

Reduce residual concentrations of active chlorine by active carbon filtration or addition of reducing agents (e.g. ascorbic acid or sodium ascorbate) before discharging the waste water to surface water. Alternatively, water can be retained in a buffer before discharge.

Regular water quality assessments should be performed to assure the effluent meets all required quality standards.

4.1.3. *Where specific to the use, the particulars of likely direct or indirect effects, first aid instructions and emergency measures to protect the environment*

See Section 5 – General directions for use.

4.1.4. *Where specific to the use, the instructions for safe disposal of the product and its packaging*

See Section 5 – General directions for use.

4.1.5. *Where specific to the use, the conditions of storage and shelf-life of the product under normal conditions of storage*

See Section 5 – General directions for use.

4.2. **Use description**

Table 2

Use # 2 – Disinfection of drinking water at drinking water suppliers

Product type	PT05 – Drinking water (Disinfectants)
Where relevant, an exact description of the authorised use	/
Target organism(s) (including development stage)	Scientific name: bacteria Common name: Bacteria Development stage: Scientific name: viruses Common name: Viruses Development stage:
Field(s) of use	Indoor Outdoor Disinfection at the drinking water suppliers and their water distribution systems, by continuous dosing.
Application method(s)	Method: Closed system Detailed description: Automated dosing system Adjustment applicable in the territory of the Federal Republic of Germany in accordance with Article 44(5) of Regulation (EU) No 528/2012: In accordance with the list of treatment substances and disinfection processes of paragraph 11 of the German Drinking Water Ordinance (¹), the technical rules for dosing set out in the Deutscher Verein des Gas Wasserfaches e.V (²) – working sheets W 229, W 296, W 623 and the minimum contact time of W 229 apply (³). (See section 6 for further references)
Application rate(s) and frequency	Application Rate: 0,5 mg/l active chlorine (AC) as residual concentration in the system Dilution (%): –

	Number and timing of application: Frequency: continuous dosing Adjustment applicable in the territory of the Federal Republic of Germany in accordance with Article 44(5) of Regulation (EU) No 528/2012: In accordance with the list of treatment substances and disinfection processes of paragraph 11 of the German Drinking Water Ordinance (See section 6 for further reference) ⁽⁴⁾ Application rate: Maximum addition 1,2 mg/l free Cl₂ Concentration range after completion of treatment: maximum 0,3 mg/l free Cl₂, minimum 0,1 mg/l free Cl₂ (including the amounts before treatment and from other treatments) as residual concentration in the system In exceptional cases an addition of up to 6 mg/l free Cl₂ and concentration of up to 0,6 mg/l free Cl₂ after treatment is acceptable as residual concentration in the system, if disinfection cannot be ensured by other means or if disinfection is temporarily impaired by ammonium.
Category(ies) of users	Professional
Pack sizes and packaging material	Cylinder: 4,8-140 l (6-175 kg Cl₂) Drum: 400-1 000 l (500-1 250 kg Cl₂) Railway tanks: 43 000-44 000 l (53 750-55 000 kg Cl₂) Carbon/stainless steel

4.2.1. Use-specific instructions for use

Connect the chlorine cylinder or drum to the automated, closed dosing system. Set up the parameters of the system to obtain an active chlorine concentration in the water according to the application rate indicated above.

Please note that some Member States after primary disinfection, request to maintain a residual level of available chlorine in drinking water in the pipes as a precautionary measure. This additional amount, claimed by the applicant as 'Secondary disinfection: 0,1 to 0,5 mg/l available chlorine (residual)' has been considered as 'covered by the primary disinfection'.

4.2.2. Use-specific risk mitigation measures

Ensure that the concentration of chlorine in the drinking water does not exceed national chlorine limits before consumption.

Ensure that the concentration of chlorate present in the drinking water does not exceed the parametric values set in Directive (EU) 2020/2184 of the European Parliament and of the Council of 16 December 2020 on the quality of water intended for human consumption (OJ L 435, 23.12.2020, p. 1).

4.2.3. Where specific to the use, the particulars of likely direct or indirect effects, first aid instructions and emergency measures to protect the environment

See Section 5 – General directions for use

4.2.4. Where specific to the use, the instructions for safe disposal of the product and its packaging

See Section 5 – General directions for use

4.2.5. Where specific to the use, the conditions of storage and shelf-life of the product under normal conditions of storage

See Section 5 – General directions for use

4.3. Use description

Table 3

Use # 3 – Disinfection of water in reservoirs

Product type	PT05 – Drinking water (Disinfectants)
Where relevant, an exact description of the authorised use	/
Target organism(s) (including development stage)	Scientific name: bacteria Common name: Bacteria Development stage: Scientific name: viruses Common name: Viruses Development stage:
Field(s) of use	Indoor Outdoor Disinfection of water (with water coming from tap water network), in reservoirs/tanks, by continuous dosing.
Application method(s)	Method: Closed system Detailed description: Automated dosing system. The disinfection is carried out in the inlet of the reservoir, in order to assure proper distribution of the disinfectant in the water. Adjustment applicable in the territory of the Federal Republic of Germany in accordance with Article 44(5) of Regulation (EU) No 528/2012: In accordance with the list of treatment substances and disinfection processes of paragraph 11 of the German Drinking Water Ordinance ⁽¹⁾, the technical rules for dosing set out in the Deutscher DeutscherVerein des Gas Wasserfach e.V ⁽²⁾ – working sheets W 229, W 296, W 623 and the minimum contact time of W 229 apply ⁽³⁾. (See section 6 for further references)
Application rate(s) and frequency	Application Rate: 0,5 mg/l Active Chlorine (AC) as residual concentration in the system. Dilution (%): – Number and timing of application: Frequency: continuous dosing Adjustment applicable in the territory of the Federal Republic of Germany in accordance with Article 44(5) of Regulation (EU) No 528/2012: In accordance with the list of treatment substances and disinfection processes of paragraph 11 of the German Drinking Water Ordinance ⁽¹⁾. (See section 6 for further reference) ⁽⁴⁾.

	Application rate: maximum addition 1,2 mg/l free Cl₂; Concentration range after completion of treatment: maximum 0,3 mg/l free Cl₂, min 0,1 mg/L free Cl₂ (including the amounts before treatment and from other treatments) In exceptional cases an addition of up to 6 mg/l free Cl₂ and concentration up to 0,6 mg/l free Cl₂ after treatment is acceptable, if disinfection cannot be ensured by other means or if disinfection is temporarily impaired by the presence of ammonium.
Category(ies) of users	Professional
Pack sizes and packaging material	Cylinder: 4,8-140 l (6-175 kg Cl₂) Drum: 400-1 000 l (500-1 250 kg Cl₂) Railway tanks: 43 000-44 000 l (53 750-55 000 kg Cl₂) Carbon/stainless steel

4.3.1. Use-specific instructions for use

Connect the chlorine cylinder or drum to the automated, closed dosing system. Set up the parameters of the system to obtain a continuous active chlorine concentration in the water according to the application rate indicated above.

4.3.2. Use-specific risk mitigation measures

Ensure that the concentration of chlorine in the drinking water does not exceed national chlorine limit before consumption.

Ensure that the concentration of chlorate present in the drinking water does not exceed the parametric values set in Directive (EU) 2020/2184 of the European Parliament and of the Council of 16 December 2020 on the quality of water intended for human consumption (OJ L 435, 23.12.2020, p. 1).

4.3.3. Where specific to the use, the particulars of likely direct or indirect effects, first aid instructions and emergency measures to protect the environment

See Section 5 – General directions for use

4.3.4. Where specific to the use, the instructions for safe disposal of the product and its packaging

See Section 5 – General directions for use

4.3.5. Where specific to the use, the conditions of storage and shelf-life of the product under normal conditions of storage

See Section 5 – General directions for use

4.4. Use description

Table 4

Use # 4 – Disinfection of water in collective systems

Product type	PT05 – Drinking water (Disinfectants)
Where relevant, an exact description of the authorised use	/
Target organism(s) (including development stage)	Scientific name: bacteria Common name: Bacteria Development stage:

	Scientific name: viruses Common name: Viruses Development stage: Scientific name: legionella pneumophila Common name: Bacteria Development stage:
Field(s) of use	Indoor Outdoor In Public institutions, healthcare facilities Disinfection of drinking water in collective drinking water systems by continuous dosing
Application method(s)	Method: Closed system Detailed description: Automated dosing system Adjustment applicable in the territory of the Federal Republic of Germany in accordance with Article 44(5) of Regulation (EU) No 528/2012: In accordance with the list of treatment substances and disinfection processes of paragraph 11 of the German Drinking Water Ordinance, the requirements set out in the Deutscher Verein des Gas Wasserfaches e.V. ⁽²⁾ – working sheets W 229, W 296, W 623 and the minimum contact time of W 229 apply ⁽³⁾. (See section 6 for further references).
Application rate(s) and frequency	Application Rate: 1 mg/l active chlorine (AC) as residual concentration in the system Dilution (%): – Number and timing of application: Frequency: continuous dosing Adjustment applicable in the territory of the Federal Republic of Germany in accordance with Article 44(5) of Regulation (EU) No 528/2012: In accordance with the list of treatment substances and disinfection processes of paragraph 11 of the German Drinking Water Ordinance ⁽¹⁾. (See section 6 for further reference) ⁽⁴⁾ Application rate: maximum addition 1,2 mg/l free Cl₂; Concentration range after completion of treatment: maximum 0,3 mg/l free Cl₂, min 0,1 mg/L free Cl₂ (including the amounts before treatment and from other treatments) In exceptional cases an addition of up to 6 mg/l free Cl₂ and concentration up to 0,6 mg/l free Cl₂ after treatment is acceptable, if disinfection cannot be ensured by other means or if disinfection is temporarily impaired by the presence of ammonium.
Category(ies) of users	Professional

Pack sizes and packaging material	Cylinder: 4,8-140 l (6-175 kg Cl ₂) Drum: 400-1 000 l (500-1 250 kg Cl ₂) Railway tanks: 43 000-44 000 l (53 750-55 000 kg Cl ₂) Carbon/stainless steel
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4.4.1. *Use-specific instructions for use*

Connect the chlorine cylinder or drum to the automated, closed dosing system. Set up the parameters of the system to obtain a continuous active chlorine concentration in the water according to the application rate indicated above.

4.4.2. *Use-specific risk mitigation measures*

Ensure that the concentration of chlorine in the drinking water does not exceed national chlorine limit before consumption.

Ensure that the concentration of chlorate present in the drinking water does not exceed the parametric values set in Directive (EU) 2020/2184 of 16 December 2020 on the quality of water intended for human consumption (OJ L 435, 23.12.2020, p. 1).

4.4.3. *Where specific to the use, the particulars of likely direct or indirect effects, first aid instructions and emergency measures to protect the environment*

See Section 5 – General directions for use

4.4.4. *Where specific to the use, the instructions for safe disposal of the product and its packaging*

See Section 5 – General directions for use

4.4.5. *Where specific to the use, the conditions of storage and shelf-life of the product under normal conditions of storage*

See Section 5 – General directions for use

4.5. **Use description**

Table 5

Use # 5 – Disinfection of drinking water for animals

Product type	PT05 – Drinking water (Disinfectants)
Where relevant, an exact description of the authorised use	/
Target organism(s) (including development stage)	Scientific name: bacteria Common name: Bacteria Development stage: Scientific name: viruses Common name: Viruses Development stage:
Field(s) of use	Indoor Outdoor Disinfection of drinking water for animals (with water coming from tap water network) in agricultural areas, by continuous dosing.

Application method(s)	Method: Closed system Detailed description: Automated dosing system
Application rate(s) and frequency	Application Rate: 0,5 mg/l active chlorine (AC) as residual concentration in the system. Dilution (%): – Number and timing of application: Frequency: continuous dosing
Category(ies) of users	Professional
Pack sizes and packaging material	Cylinder: 4,8-140 l (6-175 kg Cl ₂) Drum: 400-1 000 l (500-1 250 kg Cl ₂) Railway tanks: 43 000-44 000 l (53 750-55 000 kg Cl ₂) Carbon/stainless steel

4.5.1. *Use-specific instructions for use*

Connect the chlorine cylinder or drum to the automated, closed dosing system. Set up the parameters of the system to obtain a continuous active chlorine concentration in the water according to the application rate indicated above.

4.5.2. *Use-specific risk mitigation measures*

For food commodities, ensure that the concentration of chlorate present in food does not exceed the MRL values set in Commission Regulation (EU) 2020/749 of 4 June 2020 amending Annex III to Regulation (EC) No 396/2005 of the European Parliament and of the Council as regards maximum residue levels for chlorate in or on certain products (OJ L 178, 8.6.2020, p. 7).

4.5.3. *Where specific to the use, the particulars of likely direct or indirect effects, first aid instructions and emergency measures to protect the environment*

See Section 5 – General directions for use

4.5.4. *Where specific to the use, the instructions for safe disposal of the product and its packaging*

See Section 5 – General directions for use

4.5.5. *Where specific to the use, the conditions of storage and shelf-life of the product under normal conditions of storage*

See Section 5 – General directions for use

5. GENERAL DIRECTIONS FOR USE ⁽¹⁾

5.1. **Instructions for use**

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⁽¹⁾ Instructions for use, risk mitigation measures and other directions for use under this section are valid for any authorised uses.

5.2. Risk mitigation measures

For connecting or disconnecting the product containers as well as for maintenance or repair of the gas pipe system, the following risk mitigation measures (RMMs) are mandatory:

- an alarm system (trigger value corresponding to the acute exposure concentration (AEC): 0,5 mg active chlorine/m³ (or lower according to national legislation) which initiates safety procedures like wearing respiratory protective equipment (RPE) according to CEN standard EN14387: Respiratory protective devices – Gas filter(s) and combined filter(s) – Requirements, testing, marking (or equivalent);
- application of local exhaust ventilation (LEV) (according to the national legislation) and low-pressure/vacuum are in place to avoid chlorine emission;
- the electrochemical sensors used for measurements to detect various chlorinated species in addition to chlorine itself;
- sensors to measure exposure also when the operators are using RPE according to CEN standard EN141 or equivalent.

5.3. Particulars of likely direct or indirect effects, first aid instructions and emergency measures to protect the environment

Avoid breathing this toxic gas as much as possible. IF INHALED: Move to fresh air and keep at rest in a position comfortable for breathing. Immediately call 112/ambulance for medical assistance.

Information for healthcare personnel/doctor:

Immediately initiate life support measures, thereafter call a POISON CENTRE.

IF SWALLOWED: Not applicable.

IF ON SKIN: Take off all contaminated clothing and wash it before reuse. Wash skin with water. If skin irritation occurs: Get medical advice.

IF IN EYES: Rinse with water. Remove contact lenses, if present and easy to do. Continue rinsing for 5 minutes. Call a POISON CENTRE or a doctor.

5.4. Instructions for safe disposal of the product and its packaging

At the end of the treatment, dispose of unused product and the packaging in accordance with local requirements.

Do not discharge unused product on the ground, into water courses, into pipes (sink, toilets...) or down the drains.

5.5. Conditions of storage and shelf-life of the product under normal conditions of storage

Storage conditions:

Airtight pressure tanks: Due to its chemical and physical properties, chlorine gas is always stored in dedicated carbon/steel recipients with special, dedicated valves. Chlorine packages for use within the EU should be constructed and labelled according to Directive 2010/35/EU of the European Parliament and of the Council ⁽³⁾ and the Agreement concerning the International Carriage of Dangerous Goods by Road (ADR) done at Geneva on 30 September 1957. See section 6 for further reference. Maximum filling 1,25 kg/l (80 % of volume approx.).

Keep containers with chlorine tightly closed and store in a cool, dry and well-ventilated place. Tightly screw on the valve outlet protection seal and the valve protection cap when storing. Prevent cylinders from falling over. Protect from heat and direct sunlight, the temperature of the container should never be below 15 °C or above 50 °C.

Chlorine should be kept away from reactive products (materials to avoid: reducing agents, combustible materials, metals in powder, acetylene, hydrogen, ammonia, hydrocarbons and organic materials).

6. OTHER INFORMATION

With respect to the 'Category(ies) of users' note:

Professionals (including industrial users) means trained professionals if this is required by national legislation.

- (¹) German Drinking Water Ordinance: Trinkwasserverordnung in der Fassung der Bekanntmachung vom 10. März 2016 (BGBl. I S. 459), die zuletzt durch Artikel 1 der Verordnung vom 22. September 2021 (BGBl. I S. 4343) geändert worden ist; list of treatment substances and disinfection processes of paragraph 11 of the German Drinking Water Ordinance: Bekanntmachung des Umweltbundesamtes der Liste der Aufbereitungsstoffe und Desinfektionsverfahren gemäß § 11 der Trinkwasserverordnung – 21. Änderung – (Stand: Dezember 2019).
 - (²) Deutscher Verein des Gas- und Wasserfaches e.V. (German Technical and Scientific Association for Gas and Water).
 - (³) Part II, Lfd. Nr.4 of the list of treatment substances and disinfection processes of paragraph 11 of the German Drinking Water Ordinance.
 - (⁴) Part I c, Lfd. Nr.2 of the list of treatment substances and disinfection processes of paragraph 11 of the German Drinking Water Ordinance.
 - (⁵) Directive 2010/35/EU of the European Parliament and of the Council of 16 June 2010 on transportable pressure equipment and repealing Council Directives 76/767/EEC, 84/525/EEC, 84/526/EEC, 84/527/EEC and 1999/36/EC (OJ L 165, 30.6.2010, p. 1).
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