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ANNEX

SUMMARY OF PRODUCT CHARACTERISTICS FOR A BIOCIDAL PRODUCT

Liquid chlorine

Product type(s)

PT02: Disinfectants and algaecides not intended for direct application to humans or animals

PT05: Drinking water

Authorisation number: 3547-1

R4BP asset number: BG-0032396-0000

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1. ADMINISTRATIVE INFORMATION

1.1. Trade name(s) of the product

Trade name(s)	Liquid chlorine
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1.2. Authorisation holder

Name and address of the authorisation holder	Name	Chimcomplex S.A. Borzesti
	Address	3, Industriilor Street 601124 Onesti Romania
Authorisation number		3547-1
<i>R4BP asset number</i>		BG-0032396-0000
Date of the authorisation		27/02/2024
Expiry date of the authorisation		30/04/2033

1.3. Manufacturer(s) of the product

Name of manufacturer	Chimcomplex SA Borzesti
Address of manufacturer	3, Industriilor Street 601124 Onesti Romania
Location of manufacturing sites	3, Industriilor Street 601124 Onesti Romania
	1, Uzinei Street 240050 Ramnicu Valcea Romania

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

Active substance	Active chlorine released from chlorine
Name of manufacturer	Chimcomplex SA Borzesti
Address of manufacturer	3, Industriilor Street 601124 Onesti Romania
Location of manufacturing sites	3, Industriilor Street 601124 Onesti Romania
	1, Uzinei Street 240050 Ramnicu Valcea Romania

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	7782-50-5	231-959-5	99,5

2.2. Type(s) of formulation

GA Gas

3. HAZARD AND PRECAUTIONARY STATEMENTS

Hazard statements	H270: May cause or intensify fire; oxidiser. H315: Causes skin irritation. H319: Causes serious eye irritation. H331: Toxic if inhaled. H335: May cause respiratory irritation. H400: Very toxic to aquatic life. H280: Contains gas under pressure; may explode if heated.
Precautionary statements	P220: Keep away from clothing or other combustible materials. P260: Do not breathe gas. P273: Avoid release to the environment. P280: Wear protective gloves. P280: Wear protective clothing. P280: Wear eye protection. P280: Wear face protection. P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing. P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P391: Collect spillage. P403+P233: Store in a well-ventilated place. Keep container tightly closed. P405: Store locked up. P410: Protect from sunlight. P370+P376: In case of fire: Stop leak if safe to do so. P501: Dispose of contents to local regulation.

4. AUTHORISED USE(S)

4.1. Use description

Table 1. Use #1 - Disinfection of swimming pool water

Product type	PT02: Disinfectants and algacides not intended for direct application to humans or animals
Where relevant, an exact description of the authorised use	NA
Target organism(s) (including development stage)	Scientific name: bacteria Common name: Bacteria Development stage: no data Scientific name: viruses Common name: Viruses Development stage: no data Scientific name: algae Common name: algae Development stage: no data Scientific name: fungal spores Common name: fungi Development stage: spores Scientific name: protozoa Common name: Protozoa Development stage: no data
Field(s) of use	indoor use outdoor use Indoor & outdoor large-scale swimming pools, spas and hot tubs
Application method(s)	Method: closed system Detailed description: Continuous or shock dosing (automated, closed dosing system).
Application rate(s) and frequency	Application Rate: 3 mg/L (continuous dosing); 50 mg/L (shock dosing) Number and timing of application: Continuous treatment or shock dosing (contact time to be confirmed) in case of contamination.
Category(ies) of users	trained professional ; 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) Road tanks: 15,000 L (18,750 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 automatic, closed dosing system. Set up the parameters of the system to obtain an active chlorine concentration in the water of 3 mg/L for continuous dosing or 50 mg/L for shock dosing.

4.1.2. Use-specific risk mitigation measures

After shock dosing, swimmers can only enter the water once the concentration of active chlorine is decreased to 3 mg/L.

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

None

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

None

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

None

4.2. Use description

Table 2. Use #2 - Disinfection of waste water before the waste-water plant

Product type	PT02: Disinfectants and algaecides not intended for direct application to humans or animals
Where relevant, an exact description of the authorised use	NA
Target organism(s) (including development stage)	Scientific name: bacteria Common name: Bacteria Development stage: no data Scientific name: viruses Common name: Viruses Development stage: no data
Field(s) of use	indoor use outdoor use Indoor/outdoor Disinfection of sewage waste/waste water before the waste water plant (pre-chlorination).
Application method(s)	Method: closed system Detailed description: Continuous or shock dosing (automated, closed dosing system).
Application rate(s) and frequency	Application Rate: 5 mg/L (continuous dosing); 40 mg/L (shock dosing) Number and timing of application: Continuous treatment or shock dosing (contact time to be determined) in case of contamination.
Category(ies) of users	industrial ; trained professional ; 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) Road tanks: 15,000 L (18,750 kg Cl ₂) Railway tanks: 43,000 - 44,000 L (53,750 - 55,000 kg Cl ₂) Carbon/stainless steel

4.2.1. Use-specific instructions for use

Connect the chlorine cylinder or drum to the automatic, closed dosing system. Set up the parameters of the system to obtain an active chlorine concentration in the water of 5 mg/L for continuous dosing or 40 mg/L for shock dosing.

4.2.2. Use-specific risk mitigation measures

None

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

None

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

None

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

None

4.3. Use description

Table 3. Use #3 - Disinfection of waste water after the waste-water plant

Product type	PT02: Disinfectants and algaecides not intended for direct application to humans or animals
Where relevant, an exact description of the authorised use	NA
Target organism(s) (including development stage)	Scientific name: bacteria Common name: Bacteria Development stage: no data Scientific name: viruses Common name: Viruses Development stage: no data
Field(s) of use	indoor use outdoor use indoor/outdoor Disinfection of sewage waste/waste water after the waste water plant (post-chlorination).
Application method(s)	Method: closed system Detailed description: Continuous or shock dosing (automated, closed dosing system).
Application rate(s) and frequency	Application Rate: 7.5 mg/L (continuous dosing); 40 mg/L (shock dosing) Number and timing of application: Continuous treatment or shock dosing (contact time to be confirmed) in case of contamination.
Category(ies) of users	industrial ; trained professional ; 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) Road tanks: 15,000 L (18,750 kg Cl ₂)

Railway tanks: 43,000 - 44,000 L (53,750 - 55,000 kg Cl ₂) Carbon/stainless steel
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4.3.1. Use-specific instructions for use

Connect the chlorine cylinder or drum to the automatic, closed dosing system. Set up the parameters of the system to obtain an active chlorine concentration in the water of 7.5 mg/L for continuous dosing or 40 mg/L for shock dosing.

4.3.2. 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 wastewater to surface water. Alternatively, water can be retained in a buffer before discharge.

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

None

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

None

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

None

4.4. Use description

Table 4. Use #4 - Disinfection of water for industrial processes in textile industry

Product type	PT02: Disinfectants and algacides not intended for direct application to humans or animals
Where relevant, an exact description of the authorised use	Disinfection of water from wells or rivers used for industrial processes in textile industry.
Target organism(s) (including development stage)	Scientific name: bacteria Common name: Bacteria Development stage: no data Scientific name: algae Common name: algae Development stage: no data
Field(s) of use	indoor use outdoor use indoor/outdoor Industrial settings
Application method(s)	Method: closed system Detailed description: automated, closed dosing system
Application rate(s) and frequency	Application Rate: 0.5 ppm Number and timing of application: Contact time to be confirmed.
Category(ies) of users	industrial ; trained professional ; 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)

Road tanks: 15,000 L (18,750 kg Cl ₂) Railway tanks: 43,000 - 44,000 L (53,750 - 55,000 kg Cl ₂) Carbon/stainless steel

4.4.1. Use-specific instructions for use

Connect the chlorine cylinder or drum to the automatic, closed dosing system. Set up the parameters of the system to obtain an active chlorine concentration in the water of 0.5 ppm.

4.4.2. Use-specific risk mitigation measures

None

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

None

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

None

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

None

4.5. Use description

Table 5. Use #5 - Disinfection of drinking water at drinking water suppliers

Product type	PT05: Drinking water
Where relevant, an exact description of the authorised use	Disinfection at the drinking water suppliers and their water distribution systems
Target organism(s) (including development stage)	Scientific name: bacteria Common name: Bacteria Development stage: no data Scientific name: viruses Common name: Viruses Development stage: no data
Field(s) of use	indoor use outdoor use indoor/outdoor Water treatment plants, drinking water distribution facilities
Application method(s)	Method: closed system Detailed description: automated, closed dosing system (continuous, shock dosing)
Application rate(s) and frequency	Application Rate: Continuous dosing: 1.5 mg/L (primary disinfection) 0.1-0.5 mg/L (secondary disinfection) Shock dosing: 7 mg/L (primary disinfection) 1.5-4 mg/L (secondary disinfection) (to be confirmed) Number and timing of application: Continuous or shock dosing (contact time to be confirmed) in case of contamination.

Category(ies) of users	trained professional ; 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) Road tanks: 15,000 L (18,750 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 automatic, closed dosing system. Set up the parameters of the system to obtain an active chlorine concentration in the water of:

- 1.5 mg/L for primary disinfection, continuous dosing
- 0.1-0.5 mg/L for secondary disinfection, continuous dosing
- 7 mg/L for primary disinfection, shock dosing
- 1.5-4 mg/L (secondary chlorination)

4.5.2. Use-specific risk mitigation measures

None

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

None

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

None

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

None

4.6. Use description

Table 6. Use #6 - Disinfection of stationary water in reservoirs

Product type	PT05: Drinking water
Where relevant, an exact description of the authorised use	Disinfection of stationary water in reservoirs
Target organism(s) (including development stage)	Scientific name: bacteria Common name: Bacteria Development stage: no data Scientific name: viruses Common name: Viruses Development stage: no data
Field(s) of use	indoor use outdoor use indoor/outdoor Tanks and reservoirs
Application method(s)	Method: closed system Detailed description: automated, closed dosing system (continuous, shock dosing)
Application rate(s) and frequency	Application Rate: Continuous dosing: 1.5 mg/L (primary disinfection) 0.1-0.5 mg/L (secondary disinfection) Shock

	dosing: 7 mg/L (primary disinfection) 1.5-4 mg/L (secondary disinfection) (to be confirmed) Number and timing of application: Continuous or shock dosing (contact time to be confirmed) in case of contamination.
Category(ies) of users	trained professional ; 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) Road tanks: 15,000 L (18,750 kg Cl ₂) Railway tanks: 43,000 - 44,000 L (53,750 - 55,000 kg Cl ₂) Carbon/stainless steel

4.6.1. Use-specific instructions for use

Connect the chlorine cylinder or drum to the automatic, closed dosing system. Set up the parameters of the system to obtain an active chlorine concentration in the water of:

- 1.5 mg/L for primary disinfection, continuous dosing
- 0.1-0.5 mg/L for secondary disinfection, continuous dosing
- 7 mg/L for primary disinfection, shock dosing
- 1.5-4 mg/L (secondary chlorination)

4.6.2. Use-specific risk mitigation measures

None

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

None

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

None

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

None

4.7. Use description

Table 7. Use #7 - Disinfection of water in collective systems

Product type	PT05: Drinking water
Where relevant, an exact description of the authorised use	Disinfection of drinking water in collective drinking water systems.
Target organism(s) (including development stage)	Scientific name: bacteria Common name: Bacteria Development stage: no data Scientific name: viruses Common name: Viruses Development stage: no data Scientific name: legionella Common name: Bacteria Development stage: no data

Field(s) of use	indoor use outdoor use indoor/outdoor Public institutions and healthcare facilities
Application method(s)	Method: closed system Detailed description: automated, closed dosing system
Application rate(s) and frequency	Application Rate: 0.4-0.6 mg/L (continuous dosing) Number and timing of application: Continuous dosing
Category(ies) of users	trained professional ; 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) Road tanks: 15,000 L (18,750 kg Cl ₂) Railway tanks: 43,000 - 44,000 L (53,750 - 55,000 kg Cl ₂) Carbon/stainless steel

4.7.1. Use-specific instructions for use

Connect the chlorine cylinder or drum to the automatic, closed dosing system. Set up the parameters of the system to obtain a continuous active chlorine concentration in the water of 0.4-0.6 mg/L.

4.7.2. Use-specific risk mitigation measures

None

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

None

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

None

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

None

4.8. Use description

Table 8. Use #8 - Disinfection of drinking water for animals

Product type	PT05: Drinking water
Where relevant, an exact description of the authorised use	Disinfection of drinking water for animals.
Target organism(s) (including development stage)	Scientific name: bacteria Common name: Bacteria Development stage: no data Scientific name: viruses Common name: Viruses Development stage: no data
Field(s) of use	indoor use outdoor use

	indoor/outdoor Agricultural areas
Application method(s)	Method: closed system Detailed description: automated, closed dosing system (continuous dosing)
Application rate(s) and frequency	Application Rate: 0.5 mg/L Number and timing of application: Continuous dosing
Category(ies) of users	trained professional ; 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) Road tanks: 15,000 L (18,750 kg Cl ₂) Railway tanks: 43,000 - 44,000 L (53,750 - 55,000 kg Cl ₂) Carbon/stainless steel

4.8.1. Use-specific instructions for use

Connect the chlorine cylinder or drum to the automatic, closed dosing system. Set up the parameters of the system to obtain a continuous active chlorine concentration in the water of 0.5 mg/L.

4.8.2. Use-specific risk mitigation measures

None

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

None

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

None

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

None

5. GENERAL DIRECTIONS FOR USE¹

5.1. Instructions for use

Please refer to use specific instructions for use.

5.2. Risk mitigation measures

Please refer to use specific instructions for use.

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

First aid:

Contact with skin: Wash immediately with plenty of water. Seek medical advice.

On inhalation of chlorine gas: Move affected person into fresh air, keep warm and allow to rest. Call a physician immediately. As soon as practicable treat initially with a cortisone spray metered dose inhaler. If there is difficulty in breathing, give oxygen. In case of respiratory arrest, apply ventilation with respiratory device or perform mouth to nose or mouth to mouth respiration.

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

At the end of the treatment, dispose unused product and the packaging in accordance with local requirements. Used product can be flushed to municipal sewer or disposed to the manure deposit depending on local requirements.

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

Storage conditions: airtight pressure tanks. Maximum filling 1.25 kg/L (approx. 80% of volume). 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 not exceed 50°C.

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

6. OTHER INFORMATION

Pipelines and equipment of dry chlorine installations must be dry, avoiding even contact with air from atmosphere.