

chlorine, liquefied, under pressure

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

1.1 Product identifier:

Product name	: chlorine, liquefied, under pressure
Synonyms	: caswell No.179; chlorine; chlorine mol.; chlorine mol; chlorine molecular; chlorine molecule; diatomic chlorine; dichlorine; liquid chlorine; molecular chlorine; molecular chlorine, liquefied, under pressure
Registration number REACH	: 01-2119486560-35
Product type REACH	: Substance/mono-constituent
CAS number	: 7782-50-5
EC index number	: 017-001-00-7
EC number	: 231-959-5
RTECS number	: FO2100000
Molecular mass	: 70.91 g/mol
Formula	: Cl ₂

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

1.2.1 Relevant identified uses

Raw material for chemistry
Disinfectant
Water treatment
Chemical intermediate

1.2.2 Uses advised against

No uses advised against

1.3 Details of the supplier of the safety data sheet:

Supplier of the safety data sheet

BALCHEM NV
Westvaardijk 85
B-1850 Grimbergen Belgium
☎ +32 2 251 60 87
✉ +32 2 252 17 51
info.grimbergen@balchem.com

Distributor of the product

BALCHEM NV
Westvaardijk 85
B-1850 Grimbergen Belgium
☎ +32 2 251 60 87
✉ +32 2 252 17 51
info.grimbergen@balchem.com

1.4 Emergency telephone number:

24h/24h (Telephone advice: English, French, German, Dutch):
+32 14 58 45 45 (BIG)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture:

2.1.1 Classification according to Regulation EC No 1272/2008

Classified as dangerous according to the criteria of Regulation (EC) No 1272/2008

Class	Category	Hazard statements
Ox. Gas	category 1	H270: May cause or intensify fire; oxidiser.
Press. Gas	Liquefied gas	H280: Contains gas under pressure; may explode if heated.
Acute Tox.	category 2	H330: Fatal if inhaled.
Eye Irrit.	category 2	H319: Causes serious eye irritation.
STOT SE	category 3	H335: May cause respiratory irritation.
Skin Irrit.	category 2	H315: Causes skin irritation.
Aquatic Acute	category 1	H400: Very toxic to aquatic life.
Aquatic Chronic	category 1	H410: Very toxic to aquatic life with long lasting effects.

2.1.2 Classification according to Directive 67/548/EEC-1999/45/EC

Classified as dangerous in accordance with the criteria of Directives 67/548/EEC and 1999/45/EC

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T; R23 - Toxic by inhalation.

Xi; R36/37/38 - Irritating to eyes, respiratory system and skin.

N; R50 - Very toxic to aquatic organisms.

2.2 Label elements:

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



Signal word

Danger

H-statements

H270	May cause or intensify fire; oxidiser.
H280	Contains gas under pressure; may explode if heated.
H330	Fatal if inhaled.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
H315	Causes skin irritation.
H410	Very toxic to aquatic life with long lasting effects.

P-statements

P280	Wear protective gloves and eye protection/face protection.
P284	Wear respiratory protection.
P260	Do not breathe gas.
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.
P310	Immediately call a POISON CENTER/doctor.

2.3 Other hazards:

CLP

Promotes combustion
Heat may cause pressure rise in tanks/drums: explosion risk
On contact with water/moisture : corrosive
Odour tolerance may develop
May cause frostbites

SECTION 3: Composition/information on ingredients

3.1 Substances:

Name REACH Registration No	CAS No EC No	Conc. (C)	Classification according to DSD/DPD	Classification according to CLP	Note	Remark
chlorine 01-2119486560-35	7782-50-5 231-959-5	C>99 %	T; R23 Xi; R36/37/38 N; R50	Ox. Gas 1; H270 Press. Gas - Liquefied gas; H280 Acute Tox. 2; H330 Eye Irrit. 2; H319 STOT SE 3; H335 Skin Irrit. 2; H315 Aquatic Acute 1; H400 Aquatic Chronic 1; H410	(1)(2)(9)	Mono-constituent

(1) For R-phrases and H-statements in full: see heading 16

(2) Substance with a Community workplace exposure limit

(9) M-factor, see heading 16

3.2 Mixtures:

Not applicable

SECTION 4: First aid measures

4.1 Description of first aid measures:

General:

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Check the vital functions. Unconscious: maintain adequate airway and respiration. Respiratory arrest: artificial respiration or oxygen. Cardiac arrest: perform resuscitation. Victim conscious with laboured breathing: half-seated. Victim in shock: on his back with legs slightly raised. Vomiting: prevent asphyxia/aspiration pneumonia. Prevent cooling by covering the victim (no warming up). Keep watching the victim. Give psychological aid. Keep the victim calm, avoid physical strain. Depending on the victim's condition: doctor/hospital.

After inhalation:

Remove the victim into fresh air. Do not apply mouth-to-mouth resuscitation. Immediately consult a doctor/medical service.

After skin contact:

Wash immediately with lots of water. Wash immediately with PE-glycol 400. Do not apply (chemical) neutralizing agents. Take victim to a doctor if irritation persists. In case of frostbites: Wash immediately with lots of water (15 minutes)/shower. Remove clothing while washing. Do not remove clothing if it sticks to the skin. Cover wounds with sterile bandage. Consult a doctor/medical service. If burned surface > 10%: take victim to hospital.

After eye contact:

Rinse immediately with plenty of water for 15 minutes. Do not apply neutralizing agents. Take victim to an ophthalmologist.

After ingestion:

Not applicable.

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

4.2.1 Acute symptoms

After inhalation:

Dry/sore throat. Coughing. Irritation of the nasal mucous membranes. Irritation of the respiratory tract. Lacrimation. Headache. Nausea. Vomiting. Respiratory difficulties. EXPOSURE TO HIGH CONCENTRATIONS: Bloodstained phlegm. Possible laryngeal spasm/oedema. Possible inflammation of the respiratory tract. Risk of lung oedema. Disturbances of consciousness.

After skin contact:

Tingling/irritation of the skin.

After eye contact:

Irritation of the eye tissue. Redness of the eye tissue.

After ingestion:

Not applicable.

4.2.2 Delayed symptoms

No effects known.

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

If applicable and available it will be listed below.

SECTION 5: Firefighting measures

5.1 Extinguishing media:

5.1.1 Suitable extinguishing media:

BC powder. Carbon dioxide. Water spray. Polyvalent foam.

5.1.2 Unsuitable extinguishing media:

Solid water jet ineffective as extinguishing medium.

5.2 Special hazards arising from the substance or mixture:

Reacts on exposure to water (moisture) with (some) metals and their compounds. Reacts with water (moisture): release of toxic and corrosive gases/vapours (hydrogen chloride).

5.3 Advice for firefighters:

5.3.1 Instructions:

Cool tanks/drums with water spray/remove them into safety. Physical explosion risk: cool from behind cover. Do not move the load if exposed to heat. After cooling: persistent risk of physical explosion. Dilute toxic gases with water spray. Take account of toxic fire-fighting water. Use water moderately and if possible collect or contain it.

5.3.2 Special protective equipment for fire-fighters:

Gas-tight suit. Compressed air/oxygen apparatus.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures:

Keep upwind. Seal off low-lying areas. Close doors and windows of adjacent premises. No naked flames. Corrosion-proof appliances. Avoid ingress of water in the containers.

6.1.1 Protective equipment for non-emergency personnel

See heading 8.2

6.1.2 Protective equipment for emergency responders

Gas-tight suit.

Suitable protective clothing

See heading 8.2

6.2 Environmental precautions:

Contain released substance, pump into suitable containers. Plug the leak, cut off the supply. Dam up the liquid spill. Tip the container on one side to stop the leakage. Try to reduce evaporation. Take account of toxic/corrosive precipitation water. Prevent soil and water pollution. Prevent spreading in sewers.

6.3 Methods and material for containment and cleaning up:

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Small quantities of liquid spill: take up in kieselguhr sand or saw dust. Liquid spill: neutralize with caustic soda (sodium hydroxide). Scoop absorbed substance into closing containers. Carefully collect the spill/leftovers. Damaged/cooled tanks must be emptied. Clean contaminated surfaces with an excess of water. Take collected spill to manufacturer/competent authority. Wash clothing and equipment after handling.

6.4 Reference to other sections:

See heading 13.

SECTION 7: Handling and storage

The information in this section is a general description. If applicable and available, exposure scenarios are attached in annex. Always use the relevant exposure scenarios that correspond to your identified use.

7.1 Precautions for safe handling:

Keep away from naked flames/heat. Avoid contact of substance with water. Gas/vapour heavier than air at 20°C. Observe strict hygiene. Remove contaminated clothing immediately. Use corrosionproof equipment. Do not discharge the waste into the drain.

7.2 Conditions for safe storage, including any incompatibilities:

7.2.1 Safe storage requirements:

Storage temperature: < 50 °C. Store in a cool area. Keep out of direct sunlight. Store in a dry area. Store in a dark area. Keep only in the original container. Ventilation at floor level. Keep locked up. Provide for a tub to collect spills. Unauthorized persons are not admitted. Under a shelter/in the open. Meet the legal requirements. Max. storage time: 180 day(s).

7.2.2 Keep away from:

Heat sources, combustible materials, reducing agents, (strong) acids, (strong) bases, oils-fats, metals, organic materials, alcohols, water/moisture.

7.2.3 Suitable packaging material:

Steel, lead, iron, copper, nickel, bronze.

7.2.4 Non suitable packaging material:

Aluminium, tin, zinc, carbon steel, glass.

7.3 Specific end use(s):

If applicable and available, exposure scenarios are attached in annex. See information supplied by the manufacturer.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters:

8.1.1 Occupational exposure

a) Occupational exposure limit values

If limit values are applicable and available these will be listed below.

The Netherlands

Chloor	Short time value (Public occupational exposure limit value)	0.51 ppm	
	Short time value (Public occupational exposure limit value)	1.5 mg/m ³	

EU

Chlorine	Short time value (Indicative occupational exposure limit value)	0.5 ppm	
	Short time value (Indicative occupational exposure limit value)	1.5 mg/m ³	

Belgium

Chlore	Short time value	0.5 ppm	
	Short time value	1.5 mg/m ³	

USA (TLV-ACGIH)

Chlorine	Time-weighted average exposure limit 8 h (TLV - Adopted Value)	0.5 ppm	
	Short time value (TLV - Adopted Value)	1 ppm	

Germany

Chlor	Time-weighted average exposure limit 8 h (TRGS 900)	0.5 ppm	
	Time-weighted average exposure limit 8 h (TRGS 900)	1.5 mg/m ³	

France

Chlore	Short time value (VRC: Valeur réglementaire contraignante)	0.5 ppm	
	Short time value (VRC: Valeur réglementaire contraignante)	1.5 mg/m ³	

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UK

Chlorine	Short time value (Workplace exposure limit (EH40/2005))	0.5 ppm	
	Short time value (Workplace exposure limit (EH40/2005))	1.5 mg/m ³	

b) National biological limit values

If limit values are applicable and available these will be listed below.

8.1.2 Sampling methods

Product name	Test	Number
Chlorine	NIOSH	6011
CHLORINE	NIOSH	6011
Chlorine	OSHA	ID 101
Chlorine	OSHA	ID 126SGX

8.1.3 Applicable limit values when using the substance or mixture as intended

If limit values are applicable and available these will be listed below.

8.1.4 DNEL/PNEC values

DNEL - Workers

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Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects inhalation	0.75 mg/m ³	
	Acute systemic effects inhalation	1.5 mg/m ³	
	Long-term local effects inhalation	0.75 mg/m ³	
	Acute local effects inhalation	1.5 mg/m ³	
	Long-term local effects dermal	0.5 %	

DNEL - General population

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Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term local effects inhalation	0.75 mg/m ³	
	Acute systemic effects inhalation	1.5 mg/m ³	
	Long-term local effects inhalation	0.75 mg/m ³	
	Acute local effects inhalation	1.5 mg/m ³	
	Long-term local effects dermal	0.5 %	
	Long-term systemic effects oral	0.25 mg/kg bw/day	

PNEC

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Compartments	Value	Remark
Fresh water	0.21 µg/l	
Marine water	0.042 µg/l	
Aqua (intermittent releases)	0.26 µg/l	
STP	0.03 mg/l	
Oral	11.1 mg/kg food	

8.1.5 Control banding

If applicable and available it will be listed below.

8.2 Exposure controls:

The information in this section is a general description. If applicable and available, exposure scenarios are attached in annex. Always use the relevant exposure scenarios that correspond to your identified use.

8.2.1 Appropriate engineering controls

Keep away from naked flames/heat. Avoid contact of substance with water. Measure the concentration in the air regularly. Carry operations in the open/under local exhaust/ventilation or with respiratory protection.

8.2.2 Individual protection measures, such as personal protective equipment

Observe strict hygiene. Do not eat, drink or smoke during work.

a) Respiratory protection:

Wear gas mask with filter type B if conc. in air > exposure limit. High vapour/gas concentration: self-contained respirator.

b) Hand protection:

Insulated gloves.

- materials (excellent resistance)

Butyl rubber, neoprene, chloroprene rubber, viton.

- materials (poor resistance)

Polyethylene, PVC.

c) Eye protection:

Protective goggles.

d) Skin protection:

Head/neck protection. Protective clothing.

8.2.3 Environmental exposure controls:

See headings 6.2, 6.3 and 13

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SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties:

Physical form	Liquefied gas
Odour	Corrosive smell
Odour threshold	0.02 - 0.5 ppm
	0.06 - 1.5 mg/m ³
Colour	Yellow to green
Particle size	Not applicable (gas)
Explosion limits	Not applicable
Flammability	Non combustible
Log Kow	0.85 ; Estimated value
Dynamic viscosity	0.346 mPa.s ; 20 °C
Kinematic viscosity	No data available
Melting point	-101 °C
Boiling point	-34 °C
Flash point	Not applicable
Evaporation rate	No data available
Relative vapour density	2.5
Vapour pressure	6780 hPa ; 20 °C
Solubility	water ; 0.74 g/100 ml ; 20 °C
	ethanol ; soluble
	bases ; soluble
	chloroform ; soluble
	tetrachloromethane ; soluble
	tetrachloroethene ; soluble
	acetic acid ; soluble
	chlorobenzene ; soluble
Relative density	1.41 ; 20 °C ; Liquid
Decomposition temperature	No data available
Auto-ignition temperature	Not applicable
Explosive properties	No chemical group associated with explosive properties
Oxidising properties	H270
pH	Not applicable

9.2 Other information:

Critical temperature	144 °C
Critical pressure	77100 hPa
Surface tension	0.022 N/m ; 0 °C
Absolute density	1410 kg/m ³ ; 20 °C ; Liquid

SECTION 10: Stability and reactivity

10.1 Reactivity:

Promotes combustion. Substance has acid reaction.

10.2 Chemical stability:

Unstable on exposure to moisture.

10.3 Possibility of hazardous reactions:

Reacts on exposure to water (moisture) with (some) metals and their compounds. Violent to explosive reaction with many compounds e.g.: with organic material, with combustible materials, with (strong) reducers and with (some) metal powders with risk of spontaneous ignition.

10.4 Conditions to avoid:

Keep away from naked flames/heat. Avoid contact of substance with water.

10.5 Incompatible materials:

Combustible materials, reducing agents, (strong) acids, (strong) bases, oils-fats, metals, organic materials, alcohols, water/moisture.

10.6 Hazardous decomposition products:

Reacts with water (moisture): release of toxic and corrosive gases/vapours (hydrogen chloride).

SECTION 11: Toxicological information

11.1 Information on toxicological effects:

11.1.1 Test results

Acute toxicity

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Route of exposure	Parameter	Method	Value	Exposure time	Species	Value determination	Remark
Oral	LD50	Equivalent to OECD 401	1100 mg/kg bw		Rat (male)	Read-across	Aqueous solution
Dermal	LD50	Equivalent to OECD 402	>20000 mg/kg bw		Rabbit (male/female)	Read-across	Aqueous solution
Inhalation (gases)	LC50	Equivalent to OECD 403	1.462 mg/l air	30 minutes	Mouse (male/female)	Experimental value	
Inhalation (gases)	LC50	Equivalent to OECD 403	1.248 mg/l air	30 minutes	Rat (male/female)	Experimental value	

As the substance is a gas, inhalation is the most appropriate route of exposure

Conclusion

Fatal if inhaled.

Corrosion/irritation

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Route of exposure	Result	Method	Exposure time	Time point	Species	Value determination	Remark
Eye	Irritating	Other			Rabbit	Read-across	Aqueous solution
Eye	Irritating; category 2					Annex VI	
Skin	Slightly irritating	OECD 404	4 h	4; 24; 48; 72 hours	Rabbit	Read-across	Aqueous solution
Skin	Irritating; category 2					Annex VI	
Inhalation (gases)	Irritating; STOT SE cat.3					Annex VI	

The liquid form can cause frostbites, typical for all liquefied gases

Conclusion

Causes serious eye irritation.

Causes skin irritation.

May cause respiratory irritation.

Specific target organ toxicity, single exposure: classified as irritant to respiratory organs

Respiratory or skin sensitisation

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Route of exposure	Result	Method	Exposure time	Observation time point	Species	Value determination	Remark
Skin	Not sensitizing	Equivalent to OECD 406	28 days (continuous)	24; 48 hours	Guinea pig (male/female)	Read-across	Aqueous solution

The study on skin sensitisation does not need to be conducted as the substance is a gas

Conclusion

Not classified as sensitizing for skin

Specific target organ toxicity

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Route of exposure	Parameter	Method	Value	Organ	Effect	Exposure time	Species	Value determination
Oral (drinking water)	LOAEL	Equivalent to OECD 408	>34.4 mg/kg bw/day		Inhibition of enzyme production	90 day(s)	Mouse (male/female)	Read-across
Oral (drinking water)	LOAEL	OECD 408	>16.7 mg/kg bw/day		Inhibition of enzyme production	90 day(s)	Rat (male)	Experimental value
Oral (drinking water)	LOAEL	OECD 408	>24.9 mg/kg bw/day		Inhibition of enzyme production	90 day(s)	Rat (female)	Experimental value
Dermal								Data waiving
Inhalation	LOAEL	Equivalent to OECD 413	2.3 ppm	Respiratory tract	Histopathological changes	52 weeks (6h/day, 5 days/week)	Monkey (male/female)	Experimental value
Inhalation	NOAEL	Equivalent to OECD 413	0.5 ppm		No effect	52 weeks (6h/day, 5 days/week)	Monkey (male/female)	Experimental value

As the substance is a gas, inhalation is the most appropriate route of exposure

Conclusion

Not classified for subchronic toxicity

Mutagenicity (in vitro)

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Result	Method	Test substrate	Effect	Value determination

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Negative without metabolic activation	Equivalent to OECD 471	Bacteria (<i>S.typhimurium</i>)	No effect	Read-across
Positive with metabolic activation	Equivalent to OECD 473	CHL/IU cells		Read-across

Mutagenicity (in vivo)

chlorine, liquefied, under pressure

Result	Method	Exposure time	Test substrate	Organ	Value determination
Negative	Equivalent to OECD 475		Mouse (male/female)	Bone marrow	Read-across

Carcinogenicity

chlorine, liquefied, under pressure

Route of exposure	Parameter	Method	Value	Exposure time	Species	Value determination	Organ	Effect
Inhalation		Not further determined		2 year(s) (6h/day, 5 days/week)	Rat (male/female)	Experimental value		No carcinogenic effect
Oral (drinking water)		Equivalent to OECD 453		104 weeks (daily)	Rat (male/female)	Read-across		No carcinogenic effect

Reproductive toxicity

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	Parameter	Method	Value	Exposure time	Species	Effect	Organ	Value determination
Developmental toxicity	NOAEL	Equivalent to OECD 414	≥5.7 mg/kg bw/day		Rat	No effect		Read-across
Maternal toxicity	NOAEL	Equivalent to OECD 414	>5.7 mg/kg bw/day		Rat (female)	No effect		Read-across
Effects on fertility	NOAEL	Equivalent to OECD 415	≥5 mg/kg bw/day		Rat (male/female)	No effect		Read-across

Conclusion CMR

Not classified for carcinogenicity

Not classified for mutagenic or genotoxic toxicity

Not classified for reprotoxic or developmental toxicity

Toxicity other effects

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No (test) data available

Chronic effects from short and long-term exposure

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No effects known.

SECTION 12: Ecological information

12.1 Toxicity:

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	Parameter	Method	Value	Duration	Species	Test design	Fresh/salt water	Value determination
Acute toxicity fishes	LC50		0.06 - 0.10 mg/l	96 h	<i>Salmo gairdneri</i>	Flow-through system		Read-across
Acute toxicity invertebrates	EC50	OECD 202	0.0141 mg/l	48 h	<i>Daphnia magna</i>			Read-across
Toxicity algae and other aquatic plants	EC50		0.7600 mg/l	72 h	Algae			Literature
	EC50		0.1 - 0.4 mg/l	96 h	<i>Myrriophyllum sp.</i>			Read-across
Long-term toxicity fish	NOEC		0.04 mg/l	28 day(s)	<i>Menidia peninsulae</i>			Read-across
Long-term toxicity aquatic invertebrates	NOEC		0.007 mg/l	15 day(s)				Read-across
Toxicity aquatic micro-organisms	EC50		>3 mg/l	3 h	Activated sludge			Read-across

Conclusion

Highly toxic to fishes

Very toxic to invertebrates (*Daphnia*)

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Highly toxic to algae
Highly toxic to aquatic plants
Highly toxic to bacteria
pH shift
Very toxic to aquatic life with long lasting effects.

12.2 Persistence and degradability:

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Half-life soil (t_{1/2} soil)

Method	Value	Primary degradation/mineralisation	Value determination
Not applicable			

Conclusion

Biodegradability: not applicable
Hydrolysis in water

12.3 Bioaccumulative potential:

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Log Kow

Method	Remark	Value	Temperature	Value determination
		0.85		Estimated value

Conclusion

Low potential for bioaccumulation (Log Kow < 4)

12.4 Mobility in soil:

No (test) data on mobility of the substance available

12.5 Results of PBT and vPvB assessment:

The criteria of PBT and vPvB as listed in Annex XIII of Regulation (EC) No 1907/2006 do not apply to inorganic substances.

12.6 Other adverse effects:

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Global warming potential (GWP)

Not included in the list of fluorinated greenhouse gases (Regulation (EC) No 842/2006)

Ozone-depleting potential (ODP)

Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009)

SECTION 13: Disposal considerations

The information in this section is a general description. If applicable and available, exposure scenarios are attached in annex. Always use the relevant exposure scenarios that correspond to your identified use.

13.1 Waste treatment methods:

13.1.1 Provisions relating to waste

Waste material code (Directive 2008/98/EC, Decision 2000/0532/EC).

16 05 04* (gases in pressure containers and discarded chemicals: gases in pressure containers (including halons) containing dangerous substances).

Depending on branch of industry and production process, also other waste codes may be applicable. Hazardous waste according to Directive 2008/98/EC.

13.1.2 Disposal methods

Refer to manufacturer/supplier for information on recovery/ recycling. Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals.

13.1.3 Packaging/Container

Waste material code packaging (Directive 2008/98/EC).

15 01 10* (packaging containing residues of or contaminated by dangerous substances).

SECTION 14: Transport information

Road (ADR)

14.1 UN number:

UN number	1017
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14.2 UN proper shipping name:

Proper shipping name	Chlorine
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14.3 Transport hazard class(es):

Hazard identification number	265
Class	2
Classification code	2TOC

14.4 Packing group:

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Packing group	
Labels	2.3+5.1+8

14.5 Environmental hazards:

Environmentally hazardous substance mark	yes
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14.6 Special precautions for user:

Special provisions	
Limited quantities	none.

Rail (RID)

14.1 UN number:

UN number	1017
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14.2 UN proper shipping name:

Proper shipping name	Chlorine
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14.3 Transport hazard class(es):

Hazard identification number	265
Class	2
Classification code	2TOC

14.4 Packing group:

Packing group	
Labels	2.3+5.1+8 (+13)

14.5 Environmental hazards:

Environmentally hazardous substance mark	yes
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14.6 Special precautions for user:

Special provisions	
Limited quantities	none.

Inland waterways (ADN)

14.1 UN number:

UN number	1017
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14.2 UN proper shipping name:

Proper shipping name	Chlorine
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14.3 Transport hazard class(es):

Class	2
Classification code	2TOC

14.4 Packing group:

Packing group	
Labels	2.3+5.1+8

14.5 Environmental hazards:

Environmentally hazardous substance mark	yes
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14.6 Special precautions for user:

Special provisions	
Limited quantities	none.

Sea (IMDG/IMSBC)

14.1 UN number:

UN number	1017
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14.2 UN proper shipping name:

Proper shipping name	Chlorine
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14.3 Transport hazard class(es):

Class	2.3
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14.4 Packing group:

Packing group	
Labels	2.3 + 5.1 + 8

14.5 Environmental hazards:

Marine pollutant	P
Environmentally hazardous substance mark	yes

14.6 Special precautions for user:

Special provisions	
Limited quantities	none.

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code:

Annex II of MARPOL 73/78	Not applicable
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Air (ICAO-TI/IATA-DGR)

14.1 UN number:

Transport	Forbidden
UN number	1017

14.2 UN proper shipping name:

Proper shipping name	Chlorine
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14.3 Transport hazard class(es):

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chlorine, liquefied, under pressure

Class	2.3
14.4 Packing group:	
Packing group	
Labels	
14.5 Environmental hazards:	
Environmentally hazardous substance mark	no
14.6 Special precautions for user:	
Special provisions	A2
Passenger and cargo transport: limited quantities: maximum net quantity per packaging	

SECTION 15: Regulatory information

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

European legislation:

VOC content Directive 2010/75/EU

VOC content	Remark
0 %	

European drinking water standards (Directive 98/83/EC)

chlorine, liquefied, under pressure

Parameter	Parametric value	Note	Reference
Chloride	250 mg/l		Listed in Annex I, Part C, of Directive 98/83/EC on the quality of water intended for human consumption.

National legislation The Netherlands

Waste identification (the Netherlands)	LWCA (the Netherlands): KGA category 06
Waterbezwaarlijkheid	4

National legislation Germany

Schwangerschaft Gruppe	C
WGK	2; Classification water polluting in compliance with Verwaltungsvorschrift wassergefährdender Stoffe (VwVwS) of 27 July 2005 (Anhang 2)
TA-Luft	5.2.4; II

National legislation France

No data available

National legislation Belgium

No data available

Other relevant data

TLV - Carcinogen	Chlorine; A4
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15.2 Chemical safety assessment:

A chemical safety assessment has been performed.

SECTION 16: Other information

Labelling according to Directive 67/548/EEC-1999/45/EC (DSD/DPD)

Labelling according to Directive 2008/58/EC (30th adaptation of Directive 67/548/EEC)

Labels



Toxic



Dangerous for the environment

R-phrases

- 23 Toxic by inhalation
36/37/38 Irritating to eyes, respiratory system and skin
50 Very toxic to aquatic organisms

S-phrases

- (01/02) (Keep locked up and out of the reach of children)
09 Keep container in a well-ventilated place
45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible)
61 Avoid release to the environment. Refer to special instructions/safety data sheets.

Full text of any R-phrases referred to under headings 2 and 3:

- R23 Toxic by inhalation

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chlorine, liquefied, under pressure

R36/37/38 Irritating to eyes, respiratory system and skin

R50 Very toxic to aquatic organisms

Full text of any H-statements referred to under headings 2 and 3:

H270 May cause or intensify fire; oxidiser.

H280 Contains gas under pressure; may explode if heated.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H330 Fatal if inhaled.

H335 May cause respiratory irritation.

H400 Very toxic to aquatic life.

H410 Very toxic to aquatic life with long lasting effects.

(*) = INTERNAL CLASSIFICATION BY BIG

PBT-substances = persistent, bioaccumulative and toxic substances

DSD Dangerous Substance Directive

DPD Dangerous Preparation Directive

CLP (EU-GHS) Classification, labelling and packaging (Globally Harmonised System in Europe)

M-factor

chlorine, liquefied, under pressure	100		CLP Annex VI (ATP 3R)
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Specific concentration limits DSD

chlorine	C ≥ 0,25 %	N; R50	DSD Annex VI (ATP 1)
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The information in this safety data sheet is based on data and samples provided to BIG. The sheet was written to the best of our ability and according to the state of knowledge at that time. The safety data sheet only constitutes a guideline for the safe handling, use, consumption, storage, transport and disposal of the substances/preparations/mixtures mentioned under point 1. New safety data sheets are written from time to time. Only the most recent versions may be used. Old versions must be destroyed. Unless indicated otherwise word for word on the safety data sheet, the information does not apply to substances/preparations/mixtures in purer form, mixed with other substances or in processes. The safety data sheet offers no quality specification for the substances/preparations/mixtures in question. Compliance with the instructions in this safety data sheet does not release the user from the obligation to take all measures dictated by common sense, regulations and recommendations or which are necessary and/or useful based on the real applicable circumstances. BIG does not guarantee the accuracy or exhaustiveness of the information provided and cannot be held liable for any changes by third parties. This safety data sheet is only to be used within the European Union, Switzerland, Iceland, Norway and Liechtenstein. Any use outside of this area is at your own risk. Use of this safety data sheet is subject to the licence and liability limiting conditions as stated in your BIG licence agreement or when this is failing the general conditions of BIG. All intellectual property rights to this sheet are the property of BIG and its distribution and reproduction are limited. Consult the mentioned agreement/conditions for details.

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