

Section 1. Identification

Product identifier**Product Identity**

Chlorine

Other means of identification

Chlorine

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

Production of chlorinated inorganic and organic chemicals, bleaching agent for paper, textiles and fabrics, used in water purification, sewage disinfection and food processing.

Details of the supplier of the safety data sheet**Company Name**

ERCO Worldwide

Address

101 Highway 73 South Nekoosa, WI 54457 USA

Telephone

Information #: (715)- 887- 4000

Website<https://www.ercoworldwide.com/>**Email**productinfo@ercoworldwide.com**24 hour Emergency Telephone No.**

Canada & U.S.A.: 1-(800) 424 9300 (CHEMTREC)

Supplier

Refer to Manufacturer

Section 2. Hazard(s) identification

Classification of the substance or mixture

Oxidizing gas;H270

May cause or intensify fire; oxidizer.

Acute toxicity(inhalation), category 3;H331

Toxic if inhaled.

Skin corrosion/irritation category 2;H315

Causes skin irritation.

Serious eye damage / eye irritation, category 2A;H319

Causes serious eye irritation.

Specific target organ toxicity, Specific exposure category 3;H335

May cause respiratory irritation.

Aquatic toxicity (acute), category 1;H400

Very toxic to aquatic life.

Aquatic toxicity (chronic), category 1;H410

Very toxic to aquatic life with long lasting effects.

Label elements**Danger**



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H270 May cause or intensify fire; oxidizer.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H331 Toxic if inhaled.

H335 May cause respiratory irritation.

H400 Very toxic to aquatic life.

H410 Very toxic to aquatic life with long lasting effects.

[Prevention]

P244 Keep reduction valves free from grease and oil.

P261 Avoid breathing dust, fume, gas, mist, vapours, spray.

P264 Wash thoroughly after handling.

P271 Use only outdoors or in a well-ventilated area.

P273 Avoid release to the environment.

P280 Wear protective gloves, eye protection, and face protection.

[Response]

P302+352 IF ON SKIN: Wash with plenty of soap and water.

P304+340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P305+351+338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P311 Call a POISON CENTER or doctor, physician.

P312 Call a POISON CENTER, doctor or physician if you feel unwell.

P332+313 If skin irritation occurs: Get medical attention.

P337+313 If eye irritation persists: Get medical advice or attention.

P362+364 Take off contaminated clothing and wash it before reuse.

P370+376 In case of fire: Stop leak if safe to do so.

P391 Collect spillage.

[Storage]

P403+233 Store in a well ventilated place. Keep container tightly closed.

P403+235 Store in a well ventilated place. Keep cool.

P405 Store locked up.

[Disposal]

P501 Dispose of contents or container in accordance with local and national regulations.

2.3. Other hazards

This product contains no PBT/vPvB chemicals.

This product contains no endocrine disrupting chemicals.

Section 3. Composition/information on ingredients

This product contains the following substances that present a hazard within the meaning of the Hazardous Products Regulations.

Ingredient/Chemical Designations	Weight %	GHS Classification	Notes
Chlorine CAS Number: 7782-50-5 Synonyms: Chlorine	80 - 100	Serious eye damage / eye irritation, category 2;H319 Specific target organ toxicity, Specific exposure category 3;H335 Skin corrosion/irritation category 2;H315 Aquatic toxicity (acute), category 1;H400 Oxidizing gas;H270 Acute toxicity(inhalation), category 3;H331	No data available

The actual concentration or concentration range is withheld as a trade secret.

*PBT/vPvB - PBT-substance or vPvB-substance.

The full texts of the phrases are shown in Section 16.

Section 4. First aid measures

Description of first aid measures

General	In all cases of doubt, or when symptoms persist, seek medical attention. Never give anything by mouth to an unconscious person.
Inhalation	Remove to fresh air, keep patient warm and at rest. If breathing is irregular or stopped, give artificial respiration. If unconscious, place in the recovery position and obtain immediate medical attention. Give nothing by mouth.
Eyes	Irrigate copiously with clean water for at least 15 minutes, holding the eyelids apart and seek medical attention.
Skin	Remove contaminated clothing. Wash skin thoroughly with soap and water or use a recognized skin cleanser.
Ingestion	If swallowed obtain immediate medical attention. Keep at rest. Do NOT induce vomiting.
Most important symptoms and effects, both acute and delayed	
Overview	No specific symptom data available. Treat symptomatically. See section 2 for further details.
Inhalation	Toxic if inhaled. May cause respiratory irritation.
Eyes	Causes serious eye irritation.
Skin	Causes skin irritation.

Section 5. Fire-fighting measures

Extinguishing media

Recommended extinguishing media; alcohol resistant foam, CO², powder, water spray.

Unsuitable extinguishing media: Do not use; water jet.

Special hazards arising from the substance or mixture

Hazardous decomposition: Reacts with hydrogen sulfide and water forming hydrochloric acid. Combines with carbon monoxide and sulfur dioxide forming phosgene and sulfuryl chloride.

Keep reduction valves free from grease and oil.

Avoid breathing dust, fume, gas, mist, vapours, spray.

Advice for fire-fighters

As with all fires, wear positive pressure, self-contained breathing apparatus, (SCBA) with a full face piece and protective clothing. Persons without respiratory protection should leave area. Wear SCBA during clean-up immediately after fire. No smoking.

ERG Guide No. 124

Section 6. Accidental release measures**Personal precautions, protective equipment and emergency procedures**

Put on appropriate personal protective equipment (see section 8).

Environmental precautions

Do not allow spills to enter drains or waterways.

Use good personal hygiene practices. Wash hands before eating, drinking, smoking, or using toilet. Promptly remove soiled clothing and wash thoroughly before reuse.

Methods and material for containment and cleaning up

Ventilate the area and avoid breathing vapours. Take the personal protective measures listed in section 8.

Contain and absorb spillage with non-combustible materials e.g. sand, earth, and vermiculite. Place in closed containers outside buildings and dispose of according to the Waste Regulations.

Section 7. Handling and storage**Precautions for safe handling**

Follow safety procedures for containers of compressed gases. Provide special training to workers handling chlorine. Leaks should be stopped with promptly. vapours are heavier than air. Store in well-ventilated area of low fire potential and away from incompatible materials. Do not use stainless steel equipment. Regularly test and inspect piping and containment. Heating could melt plugs on cylinders and ton containers and cause safety valves on tank cars to vent, causing leaks. Moisture (more than 150 PPM of water) and chlorine can form hydrochloric and hypochlorous acids which are corrosive. Never place a leaking container in water or spray leaking container with water. Never tamper with fusible plugs or safety devices on containers: never manifold containers from liquid valves. This product is toxic to fish. Keep out of waterways and sewers.

See section 2 for further details. - [Prevention]

Conditions for safe storage, including any incompatibilities

Incompatible materials: Avoid contact with reducing agents. keep away from materials such as acetylene, turpentine & other hydrocarbons, ammonia, hydrogen, ether, metals, sulfur, & aluminum.

See section 2 for further details. - [Storage]

Specific end use(s)

No data available.

Section 8. Exposure controls / personal protection

Control parameters

		Exposure	
CAS No.	Ingredient	Source	Value
7782-50-5	Chlorine	ACGIH	TWA: 0.1 ppm STEL: 0.4 ppm
		Alberta	0.5 ppm TWA; 1.5 mg/m ³ TWA 1 ppm STEL; 2.9 mg/m ³ STEL
		British Columbia	0.5 ppm TWA 1 ppm STEL
		Manitoba	0.1 ppm TWA 0.4 ppm STEL
		New Brunswick	0.5 ppm TWA; 1.5 mg/m ³ TWA 1 ppm STEL; 2.9 mg/m ³ STEL
		Newfoundland and Labrador	0.1 ppm TWA 0.4 ppm STEL
		Nova Scotia	0.1 ppm TWA 0.4 ppm STEL
		Northwest Territories	0.5 ppm TWA 1 ppm STEL
		Nunavut	0.5 ppm TWA 1 ppm STEL
		Ontario	0.5 ppm TWA 1 ppm STEL
		Prince Edward Island	0.1 ppm TWA 0.4 ppm STEL
		Quebec	0.5 ppm TWAEV; 1.5 mg/m ³ TWAEV 1 ppm STEV; 2.9 mg/m ³ STEV
		Saskatchewan	0.5 ppm TWA 1 ppm STEL
		Yukon	1 ppm TWA; 3 mg/m ³ TWA 3 ppm STEL; 9 mg/m ³ STEL

Exposure controls

Respiratory

If workers are exposed to concentrations above the exposure limit, they must use the appropriate, certified respirators.

Eyes

Protective safety glasses recommended

Skin

Protective gloves recommended.

Engineering Controls

Provide adequate ventilation. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and any vapour below occupational exposure limits suitable respiratory protection must be worn.

Other Work Practices

Use good personal hygiene practices. Wash hands before eating, drinking, smoking, or using toilet. Promptly remove soiled clothing and wash thoroughly before reuse.

See section 2 for further details.

Section 9. Physical and chemical properties**9.1. Information on basic physical and chemical properties**

Physical State	gas
Color	Compressed liquefied gas. Amber color; liquefied gas under pressure, vapourizes to greenish yellow gas
Odor	Pungent suffocating odor
Melting point / freezing point	-149.8 °F (-101.5 °C)
Initial boiling point and boiling range	-30.28 °F (-34.04 °C)
Flammability (solid, gas)	Not Applicable
Upper/lower flammability or explosive limits	Lower Explosive Limit: Not Available Upper Explosive Limit: Not Available
Flash Point	Not Available
Auto-ignition temperature	Not Available
Decomposition temperature	Not Available
pH	Not applicable (reacts with water to form an acidic solution)
Viscosity (cSt)	Not Available
Solubility in Water	Solubility (water): 6.3 mg/l (Slightly soluble); 0.7 g/100 g of water at 20°C, 1 Atm, (reacts to form hydrochloric and hypochlorous acids) Solubility (other): Soluble in dimethylformamide, disulfur dichloride, benzene, chloroform, carbon tetrachloride, hexachlorobutadiene, tetrachloroethane, pentachloroethane, chlorobenzene, nitrobenzene, glacial acetic acid (99.84%) and other chlorides
Partition coefficient n-octanol/water (Log Kow)	Not Available
Vapour pressure (Pa)	638.4 kPa @ 20°C (68°F) 4788 mm Hg @ 20°C (68°F)
Relative Density	3.21 kg/m ³ @ 0°C (32°F)
Vapour Density	2.46 @ 0°C (32°F) (Air = 1)
Evaporation rate (Ether = 1)	Not Available
Critical Temperature	290.75 °F (143.75 °C)
Explosive Properties	290.75 °F (143.75 °C)
Oxidizing Properties	Strong oxidizing agent because of its electron-transfer capabilities. Supporter of combustion and can intensify a fire. Note, that Chlorine does not yield oxygen or any other oxidizing substance.
Other information	



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No other relevant information.

Section 10. Stability and reactivity

Reactivity

Hazardous Polymerization will not occur.

Chemical stability

Stable under normal circumstances.

Possibility of hazardous reactions

No data available.

Conditions to avoid

No data available.

Incompatible materials

Avoid contact with reducing agents. keep away fro materials such as acetylene, turpentine & other hydrocarbons, ammonia, hydrogen, ether, metals, sulfur, & aluminum.

Hazardous decomposition products

Reacts with hydrogen sulfide and water forming hydrochloric acid. Combines with carbon monoxide and sulfur dioxide forming phosgene and sulfuryl chloride.

Section 11. Toxicological information

Acute toxicity

Note: When no route specific LD50 data is available for an acute toxin, the converted acute toxicity point estimate was used in the calculation of the product's ATE (Acute Toxicity Estimate).

Ingredient	Oral LD50, mg/kg	Skin LD50, mg/kg	Inhalation vapour LC50, mg/L/4hr	Inhalation Dust/Mist LC50, mg/L/4hr	Inhalation Gas LC50, ppm
Chlorine - (7782-50-5)	8,900.00, Rat - Category: NA	> 20,000.00, Rabbit - Category: NA	No data available.	No data available.	2,113.25, Mouse - Category: 3

Carcinogen Data

CAS No.	Ingredient	Source	Value
7782-50-5	Chlorine	IARC	Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;
		ACGIH	A4

Classification	Category	Hazard Description
Acute toxicity (oral)	---	Not Applicable
Acute toxicity (dermal)	---	Not Applicable
Acute toxicity (inhalation)	3	Toxic if inhaled.
Skin corrosion/irritation	2	Causes skin irritation.
Serious eye damage/irritation	2A	Causes serious eye irritation.
Respiratory sensitization	---	Not Applicable



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Skin sensitization	---	Not Applicable
Germ cell mutagenicity	---	Not Applicable
Carcinogenicity	---	Not Applicable
Reproductive toxicity	---	Not Applicable
STOT-single exposure	---	Not Applicable
STOT-single exposure	3	May cause respiratory irritation.
STOT-single exposure	3	Not Applicable
STOT-repeated exposure	---	Not Applicable
Aspiration hazard	---	Not Applicable

Possible routes of entry: No data available.

Symptoms and effects, both acute and delayed:

No specific symptom data available.

Treat symptomatically.

Inhalation	Toxic if inhaled. May cause respiratory irritation.
Eyes	Causes serious eye irritation.
Skin	Causes skin irritation.

Section 12. Ecological information

Toxicity

Very toxic to aquatic life.

Very toxic to aquatic life with long lasting effects.

Aquatic Ecotoxicity

Ingredient	96 hr LC50 fish, mg/L	48 hr EC50 crustacea, mg/L	ErC50 algae, mg/L
Chlorine - (7782-50-5)	0.06, Rainbow Trout	0.14, Daphnia magna	No data available.

Persistence and degradability

There is no data available on the preparation itself.

Bioaccumulative potential

Not Available

Mobility in soil

No data available.

Results of PBT and vPvB assessment

This product contains no PBT/vPvB chemicals.

Other adverse effects

No data available.



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Section 13. Disposal considerations

Waste treatment methods

Waste should not be released to sewers. Observe all federal, state, and local regulations when disposing of this substance.

Section 14. Transport information

Classification Method: Classified as per Part 2, Sections 2.1 - 2.8 of the Transportation of Dangerous Goods Regulations.

	TDG (Domestic Surface Transportation)	IMO / IMDG (Ocean Transportation)	ICAO/IATA
UN number	UN1017	UN1017	UN1017
UN proper shipping name	Chlorine	Chlorine	Chlorine
Transport hazard class(es)	TDG Hazard Class: 2.3 Sub Class: 5.1, 8	IMDG: 2.3 Sub Class: 5.1, 8	Air Class: 2.3 Sub Class: 5.1, 8
Packing group	Not Applicable	Not Applicable	Not Applicable
Environmental hazards	Marine Pollutant: Yes; (Chlorine)		
Special precautions for user	Not Applicable		

Section 15. Regulatory information

Regulatory Overview The regulatory data in Section 15 is not intended to be all-inclusive, only selected regulations are represented.

This product has been classified in accordance with the hazard criteria Hazardous Products Regulations (SOR/2015-17) and the SDS contains all of the information required by those regulations.

Toxic Substance Control Act (TSCA)

Chlorine ()

Canadian Domestic Substance List (DSL):

Chlorine

Canadian Non-Domestic Substance List (NDSL):

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.



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New Jersey RTK Substances (>1%):

Chlorine

Pennsylvania RTK Substances (>1%):

Chlorine

Proposition 65 - Carcinogens (>0.0%):

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

Proposition 65 - Developmental Toxins (>0.0%):

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

Proposition 65 - Female Repro Toxins (>0.0%):

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

Proposition 65 - Male Repro Toxins (>0.0%):

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

Proposition 65 Label Warning:

This product contains no chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

Chemical Name (CAS Number)	US TSCA	Australia AICS	Korea ECL	EU EINECS	EU ELINCS	EU SVHC	EN NLP	Mexico INSQ
Chlorine (7782-50-5)	Yes	Yes	Yes	Yes	No	No	No	Yes

Chemical Name (CAS Number)	China IECSC	Japan ENCS	Japan ISHL	Japan PDSCL	Japan PRTR 1	Japan PRTR 2	Philippines PICCS	New Zealand NZIOC
Chlorine (7782-50-5)	Yes	No	Yes	Yes	No	No	Yes	Yes

Section 16. Other information

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The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to the information contained herein. We accept no responsibility and disclaim all liability for any harmful effects which may be caused by exposure to our products. Customers/users of this product must comply with all applicable health and safety laws, regulations, and orders.

The full text of the phrases appearing in section 3 is:

H270 May cause or intensify fire; oxidizer.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H331 Toxic if inhaled.

H335 May cause respiratory irritation.

H400 Very toxic to aquatic life.

Disclaimer: The information presented herein is supplied as a guide to those who handle or use this product. Safe work practices must be employed when working with any materials. It is important that the end user makes a determination regarding the adequacy of the safety procedures employed during the use of this product.



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End of Document

