Safety Data Sheet

ZINC CHLORIDE SOLUTION

SECTION 1. IDENTIFICATION

Product Identifier	Zinc Chloride Solution Zinc Chloride 62.5% Solution
Other Means of Identification	Code: ZCS6NSF** DSL: Zinc chloride ($ZnCl_2$) IUPAC: Zinc dichloride CAS: 7646-85-7
Product Use and Restrictions on Use	For commercial and industrial uses.
Initial Supplier Identifier	ClearTech Industries Inc. 1500 Quebec Avenue Saskatoon, SK. Canada S7K 1V7 Phone: 800.387.7503 Fax: 888.281.8109 www.cleartech.ca
24-Hour Emergency Phone	306.664.2522

SECTION 2. HAZARD IDENTIFICATION

Acute toxicity - oral	Category 4
Skin corrosion / irritation	Category 1B
Serious eye damage / eye irritation	Category 1
Specific target organ toxicity - single exposure	Category 3

Pictograms

Signal Word: Danger

Hazard Statements

H302 Harmful if swallowed.

H314 Causes severe skin burns and eye damage.

H335 May cause respiratory irritation.

Precautionary Statements

Prevention

P260 Do not breathe vapours, fumes, or mists.

P264 Wash affected body parts thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

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

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

Response

P301 P312 P330 P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Call a POISON CENTER or doctor if you feel unwell.
P303 P361 P353 P363	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. Wash contaminated clothing before reuse.
P304 P340 P310 P312	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor. Call a POISON CENTER or doctor if you feel unwell.
P305 P351 P338 P310	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor.

Storage

P403	Store in a well-ventilated place.
P233	Keep container tightly closed.
P405	Store locked up.

Disposal

P501	Dispose of contents / container in accordance with all federal, provincial and / or local regulations including the Canadian Environmental Protection Act.

Hazards Not Otherwise Classified

Not available

SECTION 3. COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous Ingredients:

Chemical name	*Common name(s)*	*CAS number*	*Concentration (w/w%)*
Zinc chloride (ZnCl2)	Zinc chloride	7646-85-7	60-65%

SECTION 4. FIRST-AID MEASURES

Description of necessary first-aid measures

Inhalation	Take precautions to ensure your own safety before attempting a rescue (wear appropriate protective equipment, use the buddy system). Remove source of exposure or move person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor. If breathing has stopped, trained personnel should begin rescue breathing or if the heart has stopped, immediately start cardiopulmonary resuscitation (CPR) or automated external defibrillation (AED). Avoid mouth to mouth contact by using a barrier device. Call a POISON CENTER or doctor if you feel unwell.
Ingestion	Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER or doctor. If vomiting occurs naturally, lie on your side, in the recovery position.
Skin contact	Avoid direct contact. Wear chemical protective clothing, if necessary. Take off immediately contaminated clothing, shoes and leather goods. Rinse skin with lukewarm, gently flowing water / shower for 30 minutes. Immediately call a POISON CENTER or doctor. Wash contaminated clothing before re-use or discard.
Eye contact	Avoid direct contact. Wear chemical protective gloves, if necessary. Remove source of exposure or move person to fresh air. Rinse eyes cautiously with lukewarm, gently flowing water for several minutes, while holding the eyelids open. Remove contact lenses, if present and easy to do. Continue rinsing for 30 minutes. Take care not to rinse contaminated water into the unaffected eye or onto the face. Immediately call a POISON CENTER or doctor.

Most important symptoms and effects, both acute and delayed

Inhalation	Causes severe burns to the mouth and throat (mist). May cause respiratory irritation.
Ingestion	Causes burns to the mouth and throat. Harmful if swallowed.
Skin contact	Causes severe skin burns.
Eye contact	Causes serious eye damage.
Further information	For further information see Section 11 Toxicological Information.

SECTION 5. FIRE FIGHTING MEASURES

Suitable extinguishing media	Extinguish fire using extinguishing agents suitable for the surrounding fire.
Unsuitable extinguishing media	Water jets are not recommended in fires involving chemicals.
Specific hazards arising from the chemical	In the event of a fire oxides of zinc, and chlorine may be released.
Special protective equipment for fire-fighters	Wear NIOSH-approved self-contained breathing apparatus and chemical-protective clothing.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions / Protective Equipment / Emergency Procedures	Wear appropriate personal protective equipment (See Section 08 Exposure Controls and Personal Protection). Stay upwind, ventilate area. Do not breathe vapours, fumes, or mists.
Environmental Precautions	Prevent material from entering waterways, sewers or confined spaces. Notify local health and wildlife officials. Notify operators of nearby water intakes.
Methods and Materials for Containment and Cleaning Up	SMALL SPILLS: Stop or reduce leak if safe to do so. Clean up spill with non-reactive absorbent and place in suitable, covered, labeled containers. Flush area with water. Contaminated absorbent material may pose the same hazards as the spilled product. LARGE SPILLS: Contact fire and emergency services and supplier for advice.

SECTION 7. HANDLING AND STORAGE

Precautions for Safe Handling	An emergency shower and eyewash station should be available, tested, and be near to the product being handled in accordance with provincial regulations. Use sensible workplace hygiene and housekeeping practices. Wash thoroughly after handling. Avoid all situations that could lead to harmful exposure. Prevent the release of vapours, fumes, or mists into the workplace air. Inspect containers for damage or leaks before handling. If the original label is damaged or missing replace with a workplace label. Have suitable emergency equipment for fires, spills and leaks readily available.
Conditions for Safe Storage	Store in a cool, dry, well-ventilated area, away from heat sources and incompatible materials. Always store in original labeled container. Keep containers tightly closed when not in use and when empty. Empty containers may contain hazardous residues. Protect label and keep it visible.
Incompatibilities	Bases, such as potassium hydroxide, sodium hydroxide, calcium hydroxide (slaked lime), ammonia, carbonates. Oxidizing agents, such as oxygen, hydrogen peroxide, sulphuric and nitric acids, hypochlorites and permanganates. Reducing agents, such as hydrogen, sodium borohydride, sulphur dioxide, thiosulphates, hydrazine, phosphites, carbon, and oxalic, formic and ascorbic acid. Potassium, cyanides, and powdered metals

SECTION 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Exposure limits

Component	Regulation	Type of listing	Value
Zinc chloride - Fume	ACGIH	TWA	1 mg/m³
Zinc chloride - Fume	ACGIH	STEL	2 mg/m³
Zinc chloride - Fume	NIOSH	IDLH	50 mg/m³

Engineering controls

Ventilation Requirements	Mechanical ventilation (dilution or local exhaust), process or personnel enclosure and control of process conditions should be provided in accordance with all fire codes and regulatory requirements. Supply sufficient replacement air to make up for air removed by exhaust systems.

Protective equipment

The following are recommendations only. It is the responsibility of the employer / user to conduct a hazard assessment of the process in which this product being used and determine the proper engineering controls and PPE for their process. Additional regulatory and safety information should be sought from local authorities and, if needed, a professional industrial hygienist.

Eye and face protection	Where there is potential eye or face exposure, tightly fitting safety goggles and a face shield or a full-face respirator or similar protective equipment which protects the wearer's face and eyes are recommended. Contact lenses are not recommended; they may contribute to severe eye injury.
Hand and body protection	Disposable latex or nitrile gloves are recommended to prevent incidental contact. Butyl rubber, neoprene, or PVC skin protection is recommended for extended contact. Leather gloves are not recommended for chemical protection. Refer to manufacturer's specifications for breakthrough times and permeability information; note that breakthrough times and permeability vary with temperature, application and age of material. Continued use of contaminated safety gear or clothing is not recommended, wash before reuse or discard.
Respiratory protection	If mists or aerosols are generated during handling, wear approved respiratory protection. Reevaluate any respiratory protection used regularly, as their protective effects tend to degrade over time.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	Liquid
Colour	White
Odour	Odourless
Odour threshold	Not applicable
pH	<1.0
Melting point / freezing point	-12 °C
Initial boiling point and boiling range	127 °C
Flash point	Not available
Evaporation rate	Not available

Flammability	Not applicable
Upper flammable limit	Not available
Lower flammable limit	Not available
Vapour pressure	~0 Pa @ 20 °C (Zinc chloride)
Vapour density	Not available
Relative density	Not applicable
Solubility	Soluble in water
Partition coefficient: n-octanol/water	Not available
Auto-ignition temperature	Not available
Decomposition temperature	Not available
Viscosity	Not available
Specific gravity	1.75-1.85 @ 25 °C
Particle characteristics	Not applicable

SECTION 10. STABILITY AND REACTIVITY

Reactivity	Reacts violently with bases.
Stability	This product is stable if stored according to the recommendations in Section 07.
Possibility of hazardous reactions	Hazardous polymerization is not known to occur.
Conditions to avoid	Avoid contact with incompatible materials.
Incompatible materials	Bases, such as potassium hydroxide, sodium hydroxide, calcium hydroxide (slaked lime), ammonia, carbonates. Oxidizing agents, such as oxygen, hydrogen peroxide, sulphuric and nitric acids, hypochlorites and permanganates. Reducing agents, such as hydrogen, sodium borohydride, sulphur dioxide, thiosulphates, hydrazine, phosphites, carbon, and oxalic, formic and ascorbic acid. Potassium, cyanides, and powdered metals
Hazardous decomposition products	Thermal decomposition may produce oxides of zinc, and chlorine.

SECTION 11. TOXICOLOGICAL INFORMATION

Acute Toxicity (LD50 / LC50 values)

Component	*Route*	*Species*	*Value*	*Exposure time*
Zinc chloride	Oral	Rat	1100 mg/kg bw	
Zinc chloride	Dermal	Rat	>2000 mg/kg bw	
Zinc chloride	Inhalation: aerosol	Rat	~2000 mg/m³	10 minutes

Toxic Health Effect Summary

Chemical characteristics	No known effects
Skin	Causes severe skin burns.

Ingestion	Causes burns to the mouth and throat. Harmful if swallowed.
Inhalation	Causes severe burns to the mouth and throat (mist). May cause respiratory irritation.
Eye contact	Causes serious eye damage.
Sensitization	This product and its components at their listed concentration have no known sensitizing effects.
Mutagenicity	This product and its components at their listed concentration have no known mutagenic effects.
Carcinogenicity	This product and its components at their listed concentration have no known carcinogenic effects.
Reproductive toxicity	This product and its components at their listed concentration have no known reproductive effects.
Specific organ toxicity	This product and its components at their listed concentration have no known effects on specific organs.
Aspiration hazard	Not available
Synergistic materials	Not available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Component	*Type*	*Species*	*Value*	*Exposure Time*
Zinc chloride	LC50	Fish	0.21 mg/L @ pH 6	96 hours
Zinc chloride	EC50	Aquatic invertabrates	0.182 mg/L @ pH 8	48 hours
Zinc chloride	EC50	Algea	0.041 mg/L @ pH 8	72 hours

Biodegradability	The domestic substance list categorizes zinc chloride as persistent.
Bioaccumulation	The domestic substance list categorizes zinc chloride as non-bioaccumulative.
Mobility	This product is water soluble, is not predicted to adsorb to soil and may contaminate ground water.
Other adverse effects	The domestic substance list categorizes zinc chloride as inherently toxic to aquatic organisms.

SECTION 13. DISPOSAL CONSIDERATIONS

Waste From Residues / Unused Products	Dispose in accordance with all federal, provincial, and local regulations including the Canadian Environmental Protection Act.
Contaminated Packaging	Do not remove label, follow label warnings even after the container is empty. Empty containers should be recycled or disposed of at an approved waste handling facility.

SECTION 14. TRANSPORT INFORMATION

UN number	UN1840
UN proper shipping name and description	ZINC CHLORIDE SOLUTION
Transport hazard class(es)	8
Packing group	III
Excepted quantities	5 L
Environmental hazards	Listed as a marine pollutant under Canadian TDG Regulations, schedule III.
Special precautions	No special precautions

Transport in bulk	ERAP index: not available MARPOL 73/78 and IBC Code: This product is not listed in Chapter 17 of the IBC Code.
Additional information	Secure containers (full or empty) during shipment and ensure all caps, valves, or closures are secured in the closed position.

SECTION 15. REGULATORY INFORMATION

All components of this product appear on the domestic substance list.

SECTION 16. OTHER INFORMATION

Date of latest revision: October 24, 2025

Note: The responsibility to provide a safe workplace remains with the buyer / user. The buyer / user should consider the health hazards and safety information contained herein as a guide and should take those precautions required in an individual operation to instruct employees and develop work practice procedures for a safe work environment. The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results and assume no liability for damages incurred by the use of this material. It is the responsibility of the buyer / user to comply with all applicable laws and regulations regarding handling, using, reselling and shipping this product.

Attention: Receiver of the chemical goods / SDS coordinator

As part of our commitment to the RDC Responsible Distribution® initiative, ClearTech Industries Inc. and its associated companies require, as a condition of sale, that you forward the attached Safety Data Sheet(s) to all affected employees, customers, and end-users. ClearTech will send any available supplementary handling, health, and safety information to you at your request.

If you have any questions or concerns, please call our customer service center.

References:

1) *NIOSH Pocket Guide to Chemical Hazards;* U.S. Department of Health and Human Services, https://www.cdc.gov/niosh/npg/npgd0674.html
2) *WorkSafe BC E-Limit;* Workers' Compensation Foard of British Columbia, https://elimit.online.worksafebc.com/
3) *ECHA - Registered Substance Dossier;* European Chemicals Agency, https://echa.europa.eu/registration-dossier/-/registered-dossier/15087
4) *Transportation of Dangerous Goods Regulations;* Transport Canada, https://laws-lois.justice.gc.ca/eng/regulations/SOR-2001-286/index.html
5) Globally Harmonized System of Classification and Labeling of Chemicals (GHS) *Seventh revised edition*
6) International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (IBC Code) 2007 Edition
7) The ACS Style Guide