

Material Safety Data Sheet

HAZARD WARNINGS	RISK PHRASES	PROTECTIVE CLOTHING
	<p>Corrosive to eyes and skin on contact. Toxic compound, do not ingest or inhale. Avoid all contact with this material. POSSIBLE CARCINOGEN. MINIMIZE EXPOSURE. POSSIBLE MUTAGEN. MINIMIZE EXPOSURE. Possible reproductive effector; may damage fertility or the unborn child. Environmental hazard. This material is very toxic to aquatic organisms and may cause long term adverse effects to the aquatic environment. Strongly hygroscopic -- keep container tightly sealed. Moisture sensitive material. Store under argon.</p>	

Section I. Chemical Product and Company Identification

Chemical Name	Zinc Chloride		
Catalog Number	Z0014	Supplier	TCI America 9211 N. Harborsgate St. Portland OR 1-800-423-8616
Synonym	Not available.		
Chemical Formula	ZnCl ₂		
CAS Number	7646-85-7	In case of Emergency Call	Chemtrec® (800) 424-9300 (U.S.) (703) 527-3887 (International)

Section II. Composition and Information on Ingredients

Chemical Name	CAS Number	Percent (%)	TLV/PEL	Toxicology Data
Zinc Chloride	7646-85-7	Min. 98.0 (T)	This chemical is classified as a possible carcinogen. There is no acceptable exposure limit for a carcinogen. This compound is classified as a possible mutagen. There is no acceptable exposure limit for a mutagen.	Rat LD ₅₀ (intraperitoneal) 58 mg/kg Rat LD ₅₀ (oral) 350 mg/kg Rat LD ₅₀ (subcutaneous) 330 mg/kg

Section III. Hazards Identification

Acute Health Effects	Corrosive to skin, eyes, and respiratory system. Liquid or spray mist may produce tissue damage, particularly in mucous membranes of the eyes, mouth and respiratory tract. Skin contact may produce burns. Eye contact can result in corneal damage or blindness. Inhalation of the spray mist may produce severe irritation of respiratory tract, characterized by coughing, choking, or shortness of breath. Corrosive materials may cause serious injury if ingested. Toxic if ingested or inhaled. Avoid prolonged contact with this material. Overexposure may result in serious illness or death. Follow safe industrial hygiene practices and always wear proper protective equipment when handling this compound.
Chronic Health Effects	<p>CARCINOGENIC EFFECTS : Equivocal tumorigenic agent by RTECS criteria MUTAGENIC EFFECTS : Not available. TERATOGENIC EFFECTS : Tumorigenic Effects Hamster TDLo (Parenteral) 17 mg/kg Toxic Effects Tumorigenic - Equivocal tumorigenic agent by RTECS criteria Chicken TDLo (Parenteral) 15 mg/kg Toxic Effects: Tumorigenic - Equivocal tumorigenic agent by RTECS criteria Tumorigenic Effects - Testicular tumors DEVELOPMENTAL TOXICITY: Reproductive Effects Rat TDLo (Oral) 155 mg/kg; male 33 days prior to mating. Toxic Effects: Paternal Effects - Other effects on male Endocrine - Change in GH Endocrine - Change in gonadotropins Mouse TDLo (Intraperitoneal) 50 mg/kg; female 8-11 days of pregnancy. Toxic effects: Effects on Embryo or Fetus - Fetotoxicity Specific Developmental Abnormalities - Musculoskeletal system Mouse TDLo (Oral) 456 mg/kg; male 70 days prior to mating and 21 days after birth. Toxic Effects: Effects on Newborn - Live birth index Effects on Newborn - Growth statistics Repeated exposure of the eyes to a low level of dust can produce eye irritation. Repeated skin exposure can produce local skin destruction, or dermatitis. Repeated inhalation of dust can produce varying degree of respiratory irritation or lung damage. Repeated exposure to an highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.</p>

Section IV. First Aid Measures

Eye Contact	Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention.
Skin Contact	In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.
Inhalation	If the victim is not breathing, perform mouth-to-mouth resuscitation. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, oxygen can be administered. Seek medical attention if respiration problems do not improve.
Ingestion	DO NOT INDUCE VOMITING. Loosen tight clothing such as a collar, tie, belt or waistband. If the victim is not breathing, perform mouth-to-mouth resuscitation. Examine the lips and mouth to ascertain whether the tissues are damaged, a possible indication that the toxic material was ingested; the absence of such signs, however, is not conclusive.

Section V. Fire and Explosion Data

Flammability	May be combustible at high temperature.	Auto-Ignition	Not available.
Flash Points	Not available.	Flammable Limits	Not available.
Combustion Products	Some metallic oxides. Halogenated compounds. WARNING: Highly toxic HCl gas is produced during combustion.		
Fire Hazards	Not available.		
Explosion Hazards	Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.		
Fire Fighting Media and Instructions	SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray, fog or foam. DO NOT use water jet. Consult with local fire authorities before attempting large scale fire-fighting operations.		

Section VI. Accidental Release Measures

Spill Cleanup Instructions	Corrosive material. Toxic material. Possibly carcinogenic material. Possibly mutagenic material. Possibly reproductive effecting material. Very toxic environmentally hazardous material. Strongly hygroscopic material. Moisture sensitive material. Stop leak if without risk. DO NOT get water inside container. DO NOT touch spilled material. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Eliminate all sources of ignition. Consult federal, state, and/or local authorities for assistance on disposal.
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Section VII. Handling and Storage

Handling and Storage Information	CORROSIVE. TOXIC. POSSIBLE CARCINOGEN. POSSIBLE MUTAGEN. POSSIBLE REPRODUCTIVE EFFECTER. VERY TOXIC ENVIRONMENTAL HAZARD. STRONGLY HYGROSCOPIC. MOISTURE SENSITIVE. STORE UNDER ARGON. Keep locked up. Keep container dry. Keep away from heat. Mechanical exhaust required. When not in use, tightly seal the container and store in a dry, cool place. Avoid excessive heat and light. DO NOT ingest. Do not breathe dust. Never add water to this product. Wear suitable protective clothing. If ingested, seek medical advice immediately and show the container or the label. Treat symptomatically and supportively. Always store away from incompatible compounds such as moisture.
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Section VIII. Exposure Controls/Personal Protection

Engineering Controls	Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.
Personal Protection	Face shield. Lab coat. Dust respirator. Boots. Gloves. A MSHA/NIOSH approved respirator must be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product. 
Exposure Limits	This chemical is classified as a possible carcinogen. There is no acceptable exposure limit for a carcinogen. This compound is classified as a possible mutagen. There is no acceptable exposure limit for a mutagen.

Section IX. Physical and Chemical Properties

Physical state @ 20°C	Solid. (Crystal, powder. White - almost white.)	Solubility	Soluble in ether; Very soluble in water (432 g/100 mL @ 25°C), alcohol, acetone, glycerin.
Specific Gravity	2.907 (water=1)		
Molecular Weight	136.29	Partition Coefficient	LOG K _{ow} : 4.4688
Boiling Point	732°C (1349.6°F)	Vapor Pressure	0.1 kPa/428°C
Melting Point	290°C (554°F)	Vapor Density	Not available.
Refractive Index	Not available.	Volatility	Not available.
Critical Temperature	Not available.	Odor	Odorless.
Viscosity	Not available.	Taste	Not available.

Section X. Stability and Reactivity Data

Stability	This material is stable if stored under proper conditions. (See Section VII for instructions)
Conditions of Instability	Avoid excessive heat and light. Moisture sensitive. Hygroscopic; keep container tightly closed.
Incompatibilities	Reactive with strong oxidizing agents, moisture.

Section XI. Toxicological Information

RTECS Number	ZH1400000
Routes of Exposure	Eye Contact. Ingestion. Inhalation. Skin contact.
Toxicity Data	Rat LD ₅₀ (intraperitoneal) 58 mg/kg Rat LD ₅₀ (oral) 350 mg/kg Rat LD ₅₀ (subcutaneous) 330 mg/kg
Chronic Toxic Effects	CARCINOGENIC EFFECTS : Equivocal tumorigenic agent by RTECS criteria MUTAGENIC EFFECTS : Not available. TERATOGENIC EFFECTS : Tumorigenic Effects Hamster TDLo (Parenteral) 17 mg/kg Toxic Effects Tumorigenic - Equivocal tumorigenic agent by RTECS criteria Chicken TDLo (Parenteral) 15 mg/kg Toxic Effects: Tumorigenic - Equivocal tumorigenic agent by RTECS criteria Tumorigenic Effects - Testicular tumors DEVELOPMENTAL TOXICITY: Reproductive Effects Rat TDLo (Oral) 155 mg/kg; male 33 days prior to mating. Toxic Effects: Paternal Effects - Other effects on male Endocrine - Change in GH Endocrine - Change in gonadotropins Mouse TDLo (Intraperitoneal) 50 mg/kg; female 8-11 days of pregnancy. Toxic effects: Effects on Embryo or Fetus - Fetotoxicity Specific Developmental Abnormalities - Musculoskeletal system Mouse TDLo (Oral) 456 mg/kg; male 70 days prior to mating and 21 days after birth. Toxic Effects: Effects on Newborn - Live birth index Effects on Newborn - Growth statistics Repeated exposure of the eyes to a low level of dust can produce eye irritation. Repeated skin exposure can produce local skin destruction, or dermatitis. Repeated inhalation of dust can produce varying degree of respiratory irritation or lung damage. Repeated exposure to an highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.
Acute Toxic Effects	Corrosive to skin, eyes, and respiratory system. Liquid or spray mist may produce tissue damage, particularly in mucous membranes of the eyes, mouth and respiratory tract. Skin contact may produce burns. Eye contact can result in corneal damage or blindness. Inhalation of the spray mist may produce severe irritation of respiratory tract, characterized by coughing, choking, or shortness of breath. Corrosive materials may cause serious injury if ingested. Toxic if ingested or inhaled. Avoid prolonged contact with this material. Overexposure may result in serious illness or death. Follow safe industrial hygiene practices and always wear proper protective equipment when handling this compound.

Section XII. Ecological Information

Ecotoxicity	Not available.
Environmental Fate	Not available.

Section XIII. Disposal Considerations

Waste Disposal	Recycle to process, if possible. Consult your local regional authorities. You may be able to dissolve or mix material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber system. Observe all federal, state and local regulations when disposing of the substance.
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Section XIV. Transport Information

DOT Classification	DOT Class 8: Corrosive material
PIN Number	UN2331
Proper Shipping Name	Zinc chloride, anhydrous
Packing Group (PG)	III
DOT Pictograms	

Section XV. Other Regulatory Information and Pictograms

TSCA Chemical Inventory (EPA)	This compound is ON the EPA Toxic Substances Control Act (TSCA) inventory list.
WHMIS Classification (Canada)	CLASS D-1B: Material causing immediate and serious toxic effects (TOXIC). CLASS E: Corrosive solid. On DSL.
EINECS Number (EEC)	231-592-0
EEC Risk Statements	R34- Causes burns. R23/24/25- Toxic by inhalation, in contact with skin and if swallowed. R45- May cause cancer. R46- May cause heritable genetic damage. R47- May cause birth defects. R50- Very toxic to aquatic organisms. R53- May cause long-term adverse effects in the aquatic environment.
Japanese Regulatory Data	ENCS no.: 1-264

Section XVI. Other Information

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Notice to Reader

TCI laboratory chemicals are for research purposes only and are NOT intended for use as drugs, food additives, households, or pesticides. The information herein is believed to be correct, but does not claim to be all inclusive and should be used only as a guide. Neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All chemical reagents must be handled with the recognition that their chemical, physiological, toxicological, and hazardous properties have not been fully investigated or determined. All chemical reagents should be handled only by individuals who are familiar with their potential hazards and who have been fully trained in proper safety, laboratory, and chemical handling procedures. Although certain hazards are described herein, we can not guarantee that these are the only hazards which exist. Our MSDS sheets are based only on data available at the time of shipping and are subject to change without notice as new information is obtained. Avoid long storage periods since the product is subject to degradation with age and may become more dangerous or hazardous. It is the responsibility of the user to request updated MSDS sheets for products that are stored for extended periods. Disposal of unused product must be undertaken by qualified personnel who are knowledgeable in all applicable regulations and follow all pertinent safety precautions including the use of appropriate protective equipment (e.g. protective goggles, protective clothing, breathing equipment, facial mask, fume hood). For proper handling and disposal, always comply with federal, state, and local regulations.