Safety Data Sheet

Zinc Chloride Anhydrous (95-100%) **SDS ID: MRD-255**

* * * Section 1 - IDENTIFICATION* * *

Product Identifier

Zinc Chloride Anhydrous (95-100%)

Recommended Use: Electroplating Operations

Manufacturer Information

MINERAL RESEARCH AND DEVELOPMENT
5910 Pharr Mill Road
Harrisburg, NC 28075

Phone: 704-454-4811
Fax: 704-454-7390
CHEMTREC: (800) 424-9300
US and Canadian Shipping Only- 1-703-527-3887

General Comments

NOTE: Emergency telephone numbers are to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure, or accident involving chemicals. All non-emergency questions should be directed to customer service.

* * * Section 2 - HAZARD(S) IDENTIFICATION* * *

Classification in accordance with 29 CFR 1910.1200.

Skin Corrosion / Irritation, Category 1B
Acute Toxicity (Oral), Category 4
Specific Target Organ Toxicity - Single Exposure, Category 3 (respiratory system)
Hazardous to the Aquatic Environment - Acute Hazard, Category 1
Hazardous to the Aquatic Environment - Chronic Hazard, Category 1

GHS LABEL ELEMENTS

Symbol(s)

Symbol(s)

Signal Word

DANGER

Hazard Statements

Harmful if swallowed
Causes severe skin burns and eye damage
May cause respiratory irritation
Very toxic to aquatic life with long lasting effects.

Precautionary Statements

Prevention

Wear protective gloves, clothing and eye/face protection. Do not breathe dust/fume/gas/mist/vapors/spray. Wash thoroughly after handling. Do not eat, drink, or smoke when using this product. Avoid release to the environment. In case of inadequate ventilation wear respiratory protection.

Response

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Call a POISON CENTER or doctor/physician if you feel unwell. IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Immediately call a POISON CENTER or doctor/physician. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/physician. 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/physician.

Storage

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

Disposal

Dispose in accordance with all applicable regulations.

* * * Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS* * *

CAS	Component	Percent
7646-85-7	Zinc chloride, anhydrous	95-100

* * * Section 4 - FIRST-AID MEASURES* * *

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/physician.

Skin

Take off contaminated clothing and wash before re-use. Rinse skin with water/shower. Immediately call a POISON CENTER or doctor/physician.

Ingestion

Rinse mouth. DO NOT induce vomiting. Immediately call a POISON CENTER or doctor/physician.

Inhalation

Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/physician.

* * * Section 5 - FIRE FIGHTING MEASURES * * *

General Fire Hazards

This material is corrosive. Container may burst due to heat of fire.

Hazardous Combustion Products

Decomposition products include zinc compounds, chlorides, and halogenated compounds.

Extinguishing Media

Dry chemical, foam, carbon dioxide, water fog.

Unsuitable Extinguishing Media

Do not scatter spilled material with high-pressure water streams.

Fire Fighting Equipment/Instructions

This product is corrosive, and presents a severe contact hazard to fire-fighters. Fire fighters should wear full-face, self contained breathing apparatus and impervious protective clothing. Fire fighters should avoid inhaling any combustion products. If this product is involved in a fire, fire run-off water should be contained to prevent possible environmental damage.

NFPA Ratings: Health: 3 **Fire:** 0 **Reactivity:** 0 **Other:** 0

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

* * * Section 6 - ACCIDENTAL RELEASE MEASURES * * *

Personal Precautions, Protective Equipment and Emergency Procedures

Do not breathe gas, fumes, vapor, or spray. Do not touch or walk through spilled material. In case of inadequate ventilation wear respiratory protection. Wear personal protective clothing and equipment, see Section 8.

Materials and Methods for Clean-Up

Stop the flow of material, if this is without risk. Wear appropriate protective equipment and clothing during clean-up. Contain the discharged material and dike the spilled material where possible. Prevent entry into sewers, drains, underground or confined spaces, water intakes and waterways.

Materials and Methods for Containment and Clean-Up

Absorb spill with inert material. Shovel the absorbed material into appropriate container for disposal. Decontaminate the area thoroughly.

* * * Section 7 - HANDLING AND STORAGE * * *

Handling Procedures

Do not get this material in your eyes, on your skin, or on your clothing. Do not inhale vapors or mists of this product. Wash thoroughly after handling. Do not eat, drink or use tobacco products when handling this material. Use this product with adequate ventilation. Launder work clothes frequently. See Section 8 for appropriate protective clothing, equipment and air monitoring procedures. Open containers slowly, on a stable surface. Containers of this product must be properly labeled. Empty containers may contain residual liquid or vapors. Empty containers should be handled with care.

Storage Procedures

Store containers in a cool, dry location, away from direct sunlight, sources of intense heat, or where freezing is possible. Store away from incompatible materials. Material should be stored in secondary containers, or in a diked area, as appropriate. Keep container tightly closed when not in use. Inspect all incoming containers before storage, to ensure containers are properly labeled and not damaged.

Incompatibilities

Incompatible materials include oxidizing agents, reducing agents, bases, potassium, metals, and cyanides.

* * * * * * Section 8 - Exposure Controls / Personal Protection * * ** * *

Component Exposure Limits

Zinc chloride (7646-85-7)

USA:	OSHA: 1 mg/m^3 TWA (fume), 2 mg/m^3 STEL (fume)
	ACGIH: 1 mg/m^3 TWA (fume), 2 mg/m^3 STEL (fume)
	NIOSH: 1 mg/m^3 TWA (fume), 2 mg/m^3 STEL (fume)
Australia:	1 mg/m^3 TWA (fume), 2 mg/m^3 STEL (fume)
China:	1 mg/m^3 TWA (fume), 2 mg/m^3 STEL (fume)
Korea:	1 mg/m^3 TWA (fume, Serial No. 422), 2 1 mg/m^3 STEL (fume, Serial No. 422)
Philippines:	1 mg/m^3 TWA (fume)
Alberta:	1 mg/m^3 TWA (fume), 2 mg/m^3 STEL (fume)
British Columbia:	1 mg/m^3 TWA (fume), 2 mg/m^3 STEL (fume)
Manitoba:	1 mg/m^3 TWA (fume), 2 mg/m^3 STEL (fume)
New Brunswick:	1 mg/m^3 TWA (fume), 2 mg/m^3 STEL (fume)
Northwest Territories:	1 mg/m^3 TWA (fume), 2 mg/m^3 STEL (fume)
Nova Scotia:	1 mg/m^3 TWA (fume), 2 mg/m^3 STEL (fume)
Ontario:	1 mg/m^3 TWA (fume), 2 mg/m^3 STEL (fume)
Quebec:	1 mg/m^3 TWAEV (fume)
Saskatchewan:	1 mg/m^3 TWA (fume),
Yukon:	1 mg/m^3 TWA (fume),

Appropriate Engineering Measures

Ensure compliance with applicable exposure limits. Ventilation should effectively remove and prevent buildup of any vapor/mist/fume/dust generated from the handling of this product.

Individual Protection Measures, such as Personal Protective Equipment

Eyes

Wear chemical goggles; face shield (if splashing is possible).

Skin and Body

Wear impervious gloves. When chemical splash hazard exists, wear coveralls and/or apron.

Respiratory

If ventilation is not sufficient to effectively prevent buildup of vapors or mists, appropriate approved NIOSH respiratory protection must be provided. Respirators should be selected by and used under the direction of a trained health and safety professional following requirements found in OSHA's respirator standard (29 CFR 1910.134) and ANSI's standard for respiratory protection (Z88.2-1992). A written respiratory protection program, including provisions for medical certification, training, fit testing, exposure assessments, maintenance, inspection, cleaning, and convenient, sanitary storage must be implemented.

* * * Section 9 - PHYSICAL & CHEMICAL PROPERTIES * * *

Appearance:	White, granular solid	**Odor:**	odorless
Physical State:	solid	**Odor Threshold:**	Not available
Vapor Pressure:	18 mm Hg @ 20°C (68 °F)	**pH:**	<2.0 (Concentrated Solutions); 4.0 (10% solution)
Vapor Density:	<1.0	**Specific Gravity:**	2.907 @ 15°C (59°F)

Boiling Point / Boiling Range:	732°C (1350°F) / Not available	**Evaporation Rate:**	Not available
Melting Point / Freezing Point:	290°C (554°F) / Not available	**Relative Density:**	Not available
Solubility (H_2O):	Soluble	**Auto-ignition Temperature:**	Not available
Flash Point:	Not Flammable	**Decomposition Temperature:**	Not available
Upper Flammable Limit (UFL):	Not Applicable	**Lower Flammable Limit (LFL):**	Not Applicable
Viscosity:	Not available	**Partition Coefficient (n-octanol / water):**	Not available
Flammability:	Not available		

* * * Section 10 - STABILITY AND REACTIVITY * * *

Chemical Stability

This is a stable material.

Hazardous Reaction Potential

Will not occur.

Conditions to Avoid

Avoid contact with incompatible materials.

Incompatible Products

Incompatible materials include potassium, bases, metals, cyanides, oxidizing agents, and reducing agents.

Hazardous Decomposition Products

Decomposition products include zinc compounds, chlorides, and halogenated compounds.

* * * Section 11 - TOXICOLOGICAL INFORMATION * * *

Acute Toxicity

Acute exposure can cause severe irritation and burns of the eyes, skin, gastrointestinal tract and respiratory tract.

Zinc chloride is an eye, skin and respiratory system irritant. Inhalation of zinc fumes may result in temporary metal fume fever. Other symptoms such as slight leukocytosis, respiratory disease and hypocalcemia have been reported from occupational exposure to zinc compounds.

Component Analysis - LD50/LC50

Zinc chloride (7646-85-7)

Oral LD50 Rat - 1,100 mg/kg

Information on Likely Routes of Exposure

Skin

This material may cause severe burns and permanent damage to any tissue with which it comes into contact.

Eye

May cause eye burns and eye damage.

Ingestion

No information available for the product.

Inhalation

May cause irritation to respiratory tract.

Respiratory Sensitization/Skin Sensitization

No information available for the product.

Mutagenicity

No information available for the product.

Carcinogenicity

No information available for the product.

Component Carcinogenicity

None of this product's components are listed by ACGIH, IARC, OSHA, NIOSH, or NTP.

Reproductive Toxicity

No information available for the product.

Specified Target Organ Toxicity: Single Exposure

May cause irritation to upper and lower respiratory tract.

Specified Target Organ Toxicity: Repeated Exposure

No information available for the product.

Aspiration Hazard

No information available for the product.

* * * Section 12 - ECOLOGICAL INFORMATION * * *

Ecotoxicity

Due to the acidic nature of this product, a release of this product in a river or other body of water (especially in large volumes) will kill fish and other aquatic life.

Component Analysis - Ecotoxicity - Aquatic Toxicity

No ecotoxicity data are available for this product's components.

Persistence/Degradability

No information available for the product.

Bioaccumulation

No information available for the product.

Mobility in Soil

No information available for the product.

* * * Section 13 - DISPOSAL CONSIDERATIONS * * *

Waste Disposal Instructions

Dispose of in accordance with all applicable federal, state and local regulations. If discarded, this product may be considered a RCRA corrosive waste, D002.

Disposal of Contaminated Containers or Packaging

Dispose in accordance with all applicable regulations.

* * * Section 14 - TRANSPORT INFORMATION * * *

US DOT Information

Shipping Name: Zinc chloride, anhydrous
UN #: UN2331 **Hazard Class:** 8 **Packing Group:** III
Required Label(s): CORROSIVE
ERG#: 154

Canada Transportation of Dangerous Goods Information

Shipping Name Zinc chloride, anhydrous
UN #: UN2331 **Hazard Class:** 8 **Packing Group:** III
Required Label(s): CORROSIVE

IMDG Information

Shipping Name Zinc chloride, anhydrous
UN #: UN2331 **Hazard Class:** 8 **Packing Group:** III
Required Label(s): CORROSIVE
EMS#: F-A, S-B

* * * * * * Section 15 - Regulatory Information * * ** * *

U.S. Federal Regulations

The component is listed on the U.S. EPA TSCA Inventory List.

U.S. Federal Regulations

This material contains one or more of the following chemicals required to be identified under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 311/312 (40 CFR 370.21), SARA Section 313 (40 CFR 372.65), and CERCLA (40 CFR 302.4).

Zinc Chloride (7646-85-7)

SARA 313: 1 % de minimus concentration (as Zinc, fume or dust)

SARA 311/312: **Acute Health** Yes; **Chronic** No; **Fire** No; **Pressure** No; **Reactive** No

Federal Insecticide, Fungicide, and Rodenticide Act

This material does not contain chemicals present on either the Listing of Pesticide Chemicals (40 CFR 180) or Pesticides Classified for Restricted Use as listed by FIFRA.

Component Marine Pollutants

This material contains one or more of the following chemicals required by US DOT to be identified as marine pollutants.

Component	CAS	
Zinc Chloride, Anhydrous	7646-85-7	DOT regulated marine pollutant

U.S. State Regulations

State Regulations

Other state regulations may apply. Check individual state requirements.

Component Analysis - State

The following components appear on one or more of the following state hazardous substances lists:

Component	CAS	CA	MA	MN	NJ	PA	RI
Zinc Chloride	1333-82-0	Yes	Yes	Yes	Yes	Yes	Yes

Canadian WHMIS Ingredient Disclosure List (IDL)

1%- WHMIS

WHMIS Classification:

E

Component Analysis - Inventory

Component	CAS #	TSCA	DSL	NDSL	EINECS	AUST	MITI	PHIL	KOREA	ELINCS	CHINA
Zinc chloride	7646-85-7	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes

* * * * * * Section 16 - Other Information * * * * * *

MSDS History

New SDS: 04/09/2015

Key/Legend

ACGIH = American Conference of Governmental Industrial Hygienists; **ACL** = Alternate Concentration Limit; **ANSI** = American National Standards Institute; **AU** = Australia; **BOD** - Biochemical Oxygen Demand; ^{o}**C** - Celsius; **CAS** = Chemical Abstracts Service; **CERCLA** = Comprehensive Environmental Response, Compensation, and Liability Act; **CFR** = Code of Federal Regulations; **CH** = China; **CPR** = Controlled Products Regulations; **CSA** = Canada Standards Association; **DOT** = Department of Transportation; **DSL** = Domestic Substances List; **EINECS** = European Inventory of Existing Commercial Chemical Substances; **ELINCS** = European List of Notified Chemical Substances; **EmS** = Emergency Response Procedures for Ships Carrying Dangerous Goods; **EPA** = Environmental Protection Agency; **EU** = European Union; ^{o}**F** - Fahrenheit; **HEPA** = High Efficiency Particulate Air; **HMIS** = Hazardous Material Information System; **IARC** = International Agency for Research on Cancer; **IATA** = International Air Transport Association; **IDL** - Ingredient Disclosure List; **IDLH** - Immediately Dangerous to Life and Health; **IMDG** = International Maritime Dangerous Goods; **JA** = Japan; **KO** = Korea; **LEL** - Lower Explosive Limit; **MEX** = Mexico; **mg/Kg** = milligrams per Kilogram; **mg/L** = milligrams per Liter; **mg/m^3** = milligrams per Cubic Meter; **MSHA** = Mine Safety and Health Administration; **NA** = Not Applicable or Not Available; **NFPA** = National Fire Protection Association; **NIOSH** = National Institute for Occupational Safety and Health; **NOEC** – No Observed Effect Level; **NTP** = National Toxicology Program; **OSHA** = Occupational Safety and Health Administration; **PHL** = Philippines; **RCRA** = Resource Conversation & Recovery Act; **RQ** = Reportable Quantity; **SARA** = Superfund Amendments and Reauthorization Act; **STEL** = Short Term Exposure Limit; **TDG** = Transport of Dangerous Goods; **TSCA** = Toxic Substances Control Act; **TWA** - Time Weighted Average; **TWAEV** = Time Weight Average Exposure Value; **UEL** - Upper Explosive Limit; **US** - United States; **WHMIS** = Workplace Hazardous Materials Information System.

Other Information

Disclaimer: Supplier gives no warranty of merchantability or of fitness for a particular purpose. Any product purchased is sold on the assumption the purchaser will make his own tests to determine the quality and suitability of the product. Supplier expressly disclaims any and all liability for incidental and/or consequential property damage arising out of the use of this product. No information provided shall be deemed to be a recommendation to use any product in conflict with any existing patent rights. Read the Material Safety Data Sheet before handling product.

End of Sheet MRD-255