SAFETY DATA SHEET

Preparation Date: 05/08/2015 **Revision Date:** 10/16/2018 **Revision Number:** G4

1. IDENTIFICATION

Product identifier

Product code: ZI105
Product Name: ZINC CHLORIDE, GRANULAR, USP, JP

Other means of identification
Synonyms: No information available
CAS #: 7646-85-7
RTECS # ZH1400000
CI#: Not available

Recommended use of the chemical and restrictions on use
Recommended use: No information available.
Uses advised against No information available

Supplier:
Spectrum Chemical Mfg. Corp
14422 South San Pedro St.
Gardena, CA 90248
(310) 516-8000

Order Online At: https://www.spectrumchemical.com
Emergency telephone number Chemtrec 1-800-424-9300
Contact Person: Martin LaBenz (West Coast)
Contact Person: Ibad Tirmiz (East Coast)

2. HAZARDS IDENTIFICATION

Classification

This chemical is considered hazardous according to the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Considered a dangerous substance or mixture according to the Globally Harmonized System (GHS)

Acute toxicity - Oral	Category 4
Skin corrosion/irritation	Category 1 Sub-category B
Serious eye damage/eye irritation	Category 1
Specific target organ toxicity (single exposure)	Category 3

Label elements

Danger

Hazard statements
Harmful if swallowed
Causes severe skin burns and eye damage
May cause respiratory irritation

Hazards not otherwise classified (HNOC)
Not Applicable

Other hazards
Not available

Precautionary Statements - Prevention
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Do not breathe dust/fume/gas/mist/vapors/spray
Wear protective gloves/protective clothing/eye protection/face protection
Use only outdoors or in a well-ventilated area

Precautionary Statements - Response
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.
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
Wash contaminated clothing before reuse
IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor/physician. Call a POISON CENTER or doctor/physician if you feel unwell.
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
Rinse mouth
Do NOT induce vomiting

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

Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant

3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS-No.	Weight %
Zinc Chloride	7646-85-7	100

4. FIRST AID MEASURES

First aid measures

General Advice: National Capital Poison Center in the United States can provide assistance if you have a poison emergency and need to talk to a poison specialist. Call 1-800-222-1222. Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

Skin Contact: Wash off immediately with soap and plenty of water. Continue flushing with plenty of water for at least 15 minutes. Remove all contaminated clothes and shoes. Immediate medical attention is required. Call a physician or Poison Control Centre immediately.

Eye Contact: Flush eyes with water for 15 minutes. Immediate medical attention is required. Call a physician immediately.

Inhalation: Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. WARNING! It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled or ingested material is toxic, infectious or corrosive. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Get medical attention.

Ingestion: Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. If victim is conscious, give water or milk. Immediate medical attention is required.

Most important symptoms and effects, both acute and delayed

Symptoms

Severe skin and eye irritation or burns
Causes eye damage
Irritating to respiratory system
Coughing
Dyspnea (Difficulty breathing and shortness of breath)
May cause cyanosis
Causes digestive (gastrointestinal) tract irritation
May cause gastrointestinal (digestive) tract burns
May cause abdominal pain, nausea, vomiting, diarrhea
Central nervous system effects
May affect the cardiovascular system
It may affect the kidneys
May affect the liver

Indication of any immediate medical attention and special treatment needed

Notes to Physician: Treat symptomatically.

Protection of first-aiders
First-Aid Providers: Avoid exposure to blood or body fluids. Wear gloves and other necessary protective clothing. Dispose of contaminated clothing and equipment as bio-hazardous waste.

5. FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media: The product is not flammable. If it is involved in a fire, extinguish the fire using an agent suitable for the type of surrounding fire.

Unsuitable Extinguishing Media: No information available.

Specific hazards arising from the chemical

Hazardous Combustion Products: No information available.

Specific hazards: A mixture of potassium and zinc chloride produces a strong explosion on impact.

Special Protective Actions for Firefighters

Specific Methods: No information available.

Special Protective Equipment for Firefighters: As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions: Keep people away from and upwind of spill/leak. Ensure adequate ventilation. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Use personal protective equipment. Avoid contact with skin, eyes and clothing. Avoid dust formation.

Environmental precautions Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. Prevent entry into waterways, sewers, basements or confined areas.

Methods and material for containment and cleaning up

Methods for containment Stop leak if you can do it without risk. Cover with plastic sheet to prevent spreading.

Methods for cleaning up Sweep up and shovel into suitable containers for disposal. Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE

Precautions for safe handling

Technical Measures/Precautions:
Provide sufficient air exchange and/or exhaust in work rooms. Keep away from incompatible materials.

Safe Handling Advice
Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Keep away from heat and sources of ignition. Do not ingest. Do not breathe vapors/dust. Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Technical Measures/Storage Conditions:
Deliquescent. Protect from moisture. Keep container tightly closed in a dry and well-ventilated place. Store at room temperature in the original container. Store away from incompatible materials.

Incompatible Materials:
Metals
Oxidizing agents

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

National occupational exposure limits

United States

Components	CAS-No.	OSHA	NIOSH	ACGIH	AIHA WEEL
Zinc Chloride	7646-85-7	1 mg/m³ TWA	1 mg/m³ TWA 2 mg/m³ STEL	2 mg/m³ STEL fume 1 mg/m³ TWA fume	None

Canada

Components	CAS-No.	**Canada - Alberta**	**Canada - British Columbia**	**Canada - Ontario**	**Canada - Quebec**
Zinc Chloride	7646-85-7	1 mg/m³ TWA fume 2 mg/m³ STEL fume	1 mg/m³ TWA fume 2 mg/m³ STEL fume	2 mg/m³ STEL	None

Australia and Mexico

Components	CAS-No.	**Australia**	**Mexico**
Zinc Chloride	7646-85-7	2 mg/m³ STEL 1 mg/m³ TWA	1 mg/m³ TWA 2 mg/m³ STEL

Appropriate engineering controls

Engineering measures to reduce exposure: Ensure adequate ventilation. 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.

Individual protection measures, such as personal protective equipment

Personal Protective Equipment

Eye protection: Goggles

Skin and body protection: Chemical resistant apron
Gloves
Long sleeved clothing

Respiratory protection: Effective dust mask. Wear respirator with dust filter.

Hygiene measures: Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product. When using, do not eat, drink or smoke.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state:
Solid

Appearance:
Deliquescent. Granular.

Color:
White.

Odor:
Odorless.

Taste
No information available.

Formula:
ZnCl2

Molecular/Formula weight (g/mole):
136.29

Flammability:
No information available

Flashpoint (°C/°F):
No information available.

Flash Point Tested according to:
Not available

Autoignition Temperature (°C/°F):
No information available

Lower Explosion Limit (%):
No information available

Upper Explosion Limit (%):
No information available

Melting point/range(°C/°F):
290°C/554°F

Decomposition temperature(°C/°F):
No information available

Boiling point/range(°C/°F):
732°C/1349.6°F

Bulk density:
No information available

Density (g/cm3):
No information available

Specific gravity:

2.907

pH:
No information available

Vapor pressure @ 20°C (kPa):
No information available

Evaporation rate:
No information available

Vapor density:
4.7

VOC content (g/L):
No information available

Odor threshold (ppm):
No information available

Partition coefficient (n-octanol/water):
No information available

Viscosity:
No information available

Miscibility:
No information available

Solubility:
Easily soluble in cold water, hot water.Soluble in acetoneSolubility in Water: 432 g/100 water at 25°C; 614 g/100 g water at 100°C.One gram of Zinc Chloride is soluble in 0.25 ml of 2% Hydrochloric acid.One gram of Zinc Chloride is soluble in 1.3 ml of alcohol.One gram of Zinc Chloride is soluble in 2 ml of Glycerol

10. STABILITY AND REACTIVITY

Reactivity
Reactive with metals
Reactive with oxidizing agents
A mixture of potassium and zinc chloride produces a strong explosion on impact

Chemical stability

Stability: Deliquescent. Stable at normal conditions.

Possibility of Hazardous Reactions: Hazardous polymerization does not occur

Conditions to avoid: Heat. Ignition sources. Incompatible materials.

Incompatible Materials: Metals
Oxidizing agents

Hazardous decomposition products: No information available.

Other Information
Corrosivity:
Extremely corrosive in presence of aluminum
Highly corrosive in presence of copper
Slightly corrosive in presence of stainless steel (304)
Slightly corrosive in presence of stainless steel (316)
Non-corrosive in the presence of glass
Minor corrosive effect on bronze
Severe corrosive effect on Brass

Special Remarks on Corrosivity: No information available

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Principal Routes of Exposure:
Ingestion. Inhalation. Skin. Eyes.

Acute Toxicity

Component Information

Zinc Chloride	
CAS-No.	7646-85-7

LD50/oral/rat = 1100 mg/kg Oral LD50 Rat(LOLI); 350 mg/kg (RTECS)
LD50/oral/mouse = 329 mg/kg Oral LD50 Mouse
LD50/dermal/rabbit = No information available
LD50/dermal/rat = No information available
LC50/inhalation/rat = <= 1975 mg/m^3 10 min Inhalation LC50
LC50/inhalation/mouse = No information available
Other LD50 or LC50information = No information available

Product Information

LD50/oral/rat =
VALUE- Acute Tox Oral = 350 mg/kg

LD50/oral/mouse =
Value - Acute Tox Oral = 329 mg/kg

LD50/dermal/rabbit
VALUE-Acute Tox Dermal = No information available

LD50/dermal/rat
VALUE -Acute Tox Dermal = No information available

LC50/inhalation/rat
VALUE-Vapor = No information available
VALUE-Gas = No information available
VALUE-Dust/Mist = No information available

LC50/Inhalation/mouse
VALUE-Vapor = No information available
VALUE - Gas = No information available
VALUE - Dust/Mist = No information available

Symptoms

Skin Contact: Causes severe irritation and burns.

Eye Contact: Causes severe eye irritation and possible burns. May cause reversible eye damage. May cause corneal opacity. May cause corneal ulceration. May cause glaucoma.

Inhalation May cause severe respiratory tract irritation, and pneumonitis. It may affect behavior/central nervous system. Symptoms may include sore throat, coughing, shortness of breath, dyspnea, chest tightness, headache, excitement, cyanosis (bluish discoloration of skin due to deficient oxygenation of the blood), delayed lung edema, bronchial asthma . Inhalation of fumes may cause metal fume fever. It is characterized by flu-like symptoms (fever, chills, cough, muscle pain, weakness), chest pain.

Ingestion Harmful if swallowed. Causes digestive (gastrointestinal) tract irritation. May cause abdominal pain, nausea, vomiting, diarrhea. May cause anorexia. May cause digestive (gastrointestinal) tract burns. May cause perforation of the digestive

tract. May cause permanent damage to the digestive tract. It may also affect behavior/Central nervous system (excitement, central nervous system depression, lethargy, confusion), the urinary system (kidney damage - hematuria, oliguria, renal failure), cardiovascular system, respiration (dyspnea), metabolism (acidosis, hypercalcemia, pancreas (elevatedamylase, and glucose levels), liver (hepatic enzymes increased), and blood (changes in white and red blood cell count, anemia, leukocytosis, changes in serum composition).Zinc chloride is irritating or caustic depending on the concentration ingested.

Aspiration hazard No information available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Chronic Toxicity Prolonged or repeated skin contact may cause defatting and dermatitis.

Sensitization: No information available.

Mutagenic Effects: Mutations in microorganisms
Experiments with bacteria and/or yeast have shown mutagenic effects

Carcinogenic effects: Equivocal tumorigenic agent by Registery of Toxic Effects of Chemical Substances (RTECS) criteria.

Components	CAS-No.	IARC	ACGIH - Carcinogens	NTP	OSHA HCS - Carcinogens	Australia - Notifiable Carcinogenic Substances	Australia - Prohibited Carcinogenic Substances
Zinc Chloride	7646-85-7	Not listed	Not listed	Not listed	Not listed	Not listed	Not listed

ACGIH (American Conference of Governmental Industrial Hygienists)

IARC (International Agency for Research on Cancer)

NTP (National Toxicology Program)

OSHA (Occupational Safety and Health Administration of the US Department of Labor)

Reproductive toxicity No data is available

Reproductive Effects: May cause adverse reproductive effects based on animal data
Developmental Effects: May cause adverse developmental effects based on animal data
Teratogenic Effects: May cause birth defects (teratogenic effects) based on animal test data

Specific Target Organ Toxicity

STOT - single exposure STOT - single exposure. Respiratory system.
STOT - repeated exposure No information available.
Target Organs: Respiratory system. Lungs. Skin.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicity effects: No data available.

Persistence and degradability: No information available

Bioaccumulative potential: No information available.

Mobility: No information available.

13. DISPOSAL CONSIDERATIONS

Disposal Methods

Waste from residues / unused products:
Waste must be disposed of in accordance with Federal, State and Local regulation.

Contaminated packaging:
Empty containers should be taken for local recycling, recovery or waste disposal

Components	CAS-No.	RCRA - F Series Wastes	RCRA - K Series Wastes	RCRA - P Series Wastes	RCRA - U Series Wastes
Zinc Chloride	7646-85-7	None	None	None	None

14. TRANSPORT INFORMATION

DOT

UN-No:	UN2331
Proper Shipping Name:	Zinc chloride, anhydrous
Hazard Class:	8
Subsidiary Class	No information available
Packing group:	III
Emergency Response Guide Number	154
Marine Pollutant	No data available
DOT RQ (lbs):	No information available
Special Provisions	IB8, IP3, T1, TP33
Symbol(s):	[DOT]: (R4) - Identifies a material that is a hazardous substance that has a reportable quantity (RQ) of 1000 pounds (454 Kilograms).
Description:	UN2331, Zinc chloride, anhydrous, 8, III

TDG (Canada)

UN-No:	UN2331
Proper Shipping Name:	Zinc chloride, anhydrous
Hazard Class:	8
Subsidiary Risk:	No information available
Packing Group:	III
Marine Pollutant	No Information available
Description:	UN2331, Zinc chloride, anhydrous, 8, III

ADR

UN-No:	UN2331
Proper Shipping Name:	Zinc chloride, anhydrous
Hazard Class:	8
Packing Group:	III
Subsidiary Risk:	No information available
Description:	UN2331, Zinc chloride, anhydrous, 8, III, ENVIRONMENTALLY HAZARDOUS

IMO / IMDG

UN-No:	UN2331
Proper Shipping Name:	Zinc chloride, anhydrous
Hazard Class:	8
Subsidiary Risk:	P
Packing Group:	III

Marine Pollutant No information available
EMS: F-A
Description UN2331, Zinc chloride, anhydrous, 8, III, Marine pollutant

RID
UN-No: UN2331
Proper Shipping Name: Zinc chloride, anhydrous
Hazard Class: 8
Subsidiary Risk: No information available
Packing Group: III
Description: UN2331, Zinc chloride, anhydrous, 8, III, ENVIRONMENTALLY HAZARDOUS

ICAO
UN-No: UN2331
Proper Shipping Name: Zinc chloride, anhydrous
Hazard Class: 8
Subsidiary Risk: No information available
Packing Group: III
Description: UN2331, Zinc chloride, anhydrous, 8, III

IATA
UN-No: UN2331
Proper Shipping Name: Zinc chloride, anhydrous
Hazard Class: 8
Subsidiary Risk: No information available
Packing Group: III
ERG Code: 8L
Special Provisions No information available
Description: UN2331, Zinc chloride, anhydrous, 8, III

15. REGULATORY INFORMATION

International Inventories

Components	CAS-No.	U.S. TSCA	KOREA KECL	Philippines (PICCS)	Japan ENCS	CHINA	Australia (AICS)	EINECS-No.
Zinc Chloride	7646-85-7	PresentACTIVE	Present KE-35535	Present	Present (1)-264	Present	Present	Present 231-592-0

U.S. Regulations

Zinc Chloride
Massachusetts RTK: Present
New Jersey RTK Hazardous Substance List: 2030
New Jersey - Discharge Prevention - List of Hazardous Substances: Present
Pennsylvania RTK: Environmental hazard
Pennsylvania RTK - Environmental Hazard List Present
Minnesota - Hazardous Substance List: Present
New York Release Reporting - List of Hazardous Substances:
5000 lb RQ
100 lb RQ
Louisana Reportable Quantity List for Pollutants: Listed
California Directors List of Hazardous Substances: Present
FDA - Food Additives Generally Recognized as Safe (GRAS): 21 CFR 182.70,21 CFR 182.8985
FDA - 21 CFR - Total Food Additives 182.70, 182.8985, 582.80
- List Sourced from EAFUS

California Prop. 65: Safe Drinking Water and Toxic Enforcement Act of 1986.

Chemicals Known to the State of California to Cause Cancer:

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Chemicals Known to the State of California to Cause Reproductive Toxicity:
This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Components	CAS-No.	Carcinogen	Developmental Toxicity	Male Reproductive Toxicity	Female Reproductive Toxicity:
Zinc Chloride	7646-85-7	Not Listed	Not Listed	Not Listed	Not Listed

CERCLA/SARA

Components	CAS-No.	CERCLA - Hazardous Substances and their Reportable Quantities	Section 302 Extremely Hazardous Substances and TPQs	Section 302 Extremely Hazardous Substances and RQs	Section 313 - Chemical Category	Section 313 - Reporting de minimis
Zinc Chloride	7646-85-7	1000 lb final RQ 454 kg final RQ	None	None	Zinc compounds	1% de minimus concentration

U.S. TSCA

Components	CAS-No.	TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS)	TSCA 8(d) -Health and Safety Reporting
Zinc Chloride	7646-85-7	Not Applicable	Not Applicable

Canada

WHIMIS 2015 - GHS Classifications

WHMIS 2015 Hazard Classification Information: The WHMIS 2015 classification of this product has not been validated or reviewed yet.

Canada Hazardous Products Regulation This product has been classified according to the hazard criteria of the HPR (Hazardous Products Regulation) and the SDS contains all of the information required by the HPR

Components	WHMIS Ingredient Disclosure List -
Zinc Chloride	1 %

Inventory

Components	CAS-No.	Canada (DSL)	Canada (NDSL)
Zinc Chloride	7646-85-7	Present	Not Listed

Components	CAS-No.	CEPA Schedule I - Toxic Substances
Zinc Chloride	7646-85-7	Not listed
Components	CAS-No.	CEPA - 2010 Greenhouse Gases Subject to Mandatory Reporting
Zinc Chloride	7646-85-7	Not listed

EU Classification

EU GHS - SV - CLP 1272/2008

Components	CAS-No.	EU GHS - SV - CLP (1272/2008)
Zinc Chloride	7646-85-7	Acute toxicity - Oral - Acute Tox. 4: H302 Harmful if swallowed. (Minimum classification); Skin corrosion/irritation - Skin Corr. 1B: H314 Causes severe skin burns and eye damage.;

		Hazardous to aquatic environment - acute hazard - Aquatic Acute 1: H400 Very toxic to aquatic life.; Hazardous to aquatic environment - chronic hazard - Aquatic Chronic 1: H410 Very toxic to aquatic life with long lasting effects.030-003-00-2 Specific target organ toxicity - Single exposure - STOT SE 3: H335 May cause respiratory irritation. (C >= 5 %)030-003-00-2

EU - CLP (1272/2008)

R-phrase(s)
R22 - Harmful if swallowed.
R34 - Causes burns.
R50/53 - Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

S -phrase(s)
S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S45 - In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
S60 - This material and its container must be disposed of as hazardous waste.
S61 - Avoid release to the environment. Refer to special instructions/safety data sheets.
S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection.

Components	CAS-No.	**Classification**	**Concentration Limits:**	**Safety Phrases**
Zinc Chloride	7646-85-7	Xn; R22 C; R34 N; R50-53	10%<=C C; R34 5%<=C<10% Xi; R36/37/38	S: (1/2)-26-36/37-/39-45-60-61

The product is classified in accordance with Annex VI to Directive 67/548/EEC

Indication of danger:
C - Corrosive.

16. OTHER INFORMATION

Preparation Date: 05/08/2015
Revision Date: 10/16/2018
Prepared by: Sonia Owen

Disclaimer: All chemicals may pose unknown hazards and should be used with caution. This Safety Data Sheet (SDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this SDS. The physical properties reported in this SDS are obtained from the literature and do not constitute product specifications. Information contained herein does not constitute a warranty, whether expressed or implied, as to the safety, merchantability or fitness of the goods for a particular purpose. Spectrum Chemicals & Laboratory Products, Inc. assumes no

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End of Safety Data Sheet