1. Identification of the substance/preparation and of the company/undertaking

Identification of the product:
Product code: Z3015
Name of material: Zinc chloride
CAS No.: 7646-85-7
Synonyms: no information

2. Hazards identification

Classification:
Acute toxicity, Oral, Category 4
Skin Corrosion, Category 1B
Serious eye damage, Category 1
Acute aquatic toxicity, Category 1
Chronic aquatic toxicity, Category 1

Hazard Symbol:

Signal Word: Danger

Hazard Statements:
H302: Harmful if swallowed
H314: Causes severe skin burns and eye damage
H410: Very toxic to aquatic life with long lasting effects

Precautionary Statements:
P260: Do not breathe dust/fume/gas/mist/vapours/spray
P264: Wash thoroughly after handling
P270: Do not eat, drink or smoke when using this product
P273: Avoid release to the environment
P280: Wear protective gloves/protective clothing/eye protection/face protection
P301+312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
P301+330+331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting
P303+361+353: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
P304+340: IF INHALED: Remove victim to fresh air and keep at rest in a position 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
P310: Immediately call a POISON CENTER or doctor/physician
P321: Specific treatment (see supplemental first aid instructions on this label)
P363: Wash contaminated clothing before reuse
P391: Collect spillage.
P405: Store locked up
P501: Dispose of contents/container to an approved waste disposal plant

3. Composition/information on ingredients

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS Number</th>
<th>Concentration %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zinc Chloride</td>
<td>7646-85-7</td>
<td>Min. 98</td>
</tr>
</tbody>
</table>

4. 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. Cold water may be used. Get medical attention immediately.

Skin Contact:
SDS: Z3015 Zinc chloride

Contact: info@qrec.asia
In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Cover the irritated skin with an emollient. Cold water may be used. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.

**Serious Skin Contact:**
Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention.

**Inhalation:**
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

**Serious Inhalation:**
Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. WARNING: It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled material is toxic, infectious or corrosive. Seek immediate medical attention.

**Ingestion:**
Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.

**Serious Ingestion:**
Not available.

**5. Fire-fighting measures**

- **Flammability of the Product:** Non-flammable.
- **Auto-Ignition Temperature:** Not applicable.
- **Flash Points:** Not applicable.
- **Flammable Limits:** Not applicable.
- **Products of Combustion:** When heated to decomposition, it emits toxic fumes of Hydrochloric Acid, and Zinc Oxide.
- **Fire Hazards in Presence of Various Substances:** Not applicable.
- **Explosion Hazards in Presence of Various Substances:**
  - Risks of explosion of the product in presence of mechanical impact: Not applicable.
  - Risks of explosion of the product in presence of static discharge: Not available.
- **Fire Fighting Media and Instructions:** Not applicable.
- **Special Remarks on Fire Hazards:** Not available.
- **Special Remarks on Explosion Hazards:** A mixture of potassium and zinc chloride produces a strong explosion on impact.

**6. Accidental release measures**

- **Small Spill:** Use appropriate tools to put the spilled solid in a convenient waste disposal container.
- **Large Spill:** Corrosive solid. 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. Call for assistance on disposal. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

**7. Handling and storage**

- **Precautions:**
  - Keep locked up.
  - Keep container dry. Do not ingest.
  - Do not breathe dust. Never add water to this product. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes.
  - Keep away from incompatibles such as oxidizing agents, metals.
- **Storage:**

**8. 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:**
  - Splash goggles. Synthetic apron. Vapor and dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.
  - **Personal Protection in Case of a Large Spill:**
  - Splash goggles. Full suit. Vapor and dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid
inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

**Exposure Limits:**
TWA: 1 STEL: 2 (mg/m³) [United Kingdom (UK)]
TWA: 1 STEL: 2 (mg/m³) from ACGIH (TLV) [United States]
TWA: 1 STEL: 2 (mg/m³) from OSHA (PEL) [United States]
Consult local authorities for acceptable exposure limits.

### 9. Physical and chemical properties

**Physical state and appearance:** Solid. (Deliquescent solid.)
**Odor:** Odorless.
**Taste:** Not available.
**Molecular Weight:** 136.29 g/mole
**Color:** White.
**pH (1% soln/water):** Not available.
**Boiling Point:** 732°C (1349.6°F)
**Melting Point:** 290°C (554°F)
**Critical Temperature:** Not available.
**Specific Gravity:** 2.907 (Water = 1)
**Vapor Pressure:** Not applicable.
**Vapor Density:** 4.7 (Air = 1)
**Volatility:** Not available.
**Odor Threshold:** Not available.
**Water/Oil Dist. Coeff.:** Not available.
**Ionicity (in Water):** Not available.
**Dispersion Properties:** See solubility in water.
**Solubility:** Easily soluble in cold water.

### 10. Stability and reactivity

**Stability:** The product is stable.
**Instability Temperature:** Not available.
**Conditions of Instability:** Incompatible materials, moisture.
**Incompatibility with various substances:** Reactive with oxidizing agents, metals.
**Corrosivity:** Non-corrosive in presence of glass.
**Special Remarks on Reactivity:**
Very deliquescent. Incompatible with cyanides, sulfides
**Special Remarks on Corrosivity:** Zinc Chloride fumes are corrosive to metals
**Polymerization:** Will not occur.

### 11. Toxicological information

**Routes of Entry:** Absorbed through skin. Dermal contact. Inhalation. Ingestion.
**Toxicity to Animals:** Acute oral toxicity (LD₅₀): 329 mg/kg [Mouse].
**Chronic Effects on Humans:**
MUTAGENIC EFFECTS: Classified POSSIBLE for human. Mutagenic for mammalian somatic cells. Mutagenic for bacteria and/or yeast. May cause damage to the following organs: kidneys, pancreas.
**Other Toxic Effects on Humans:**
Very hazardous in case of skin contact (irritant), of ingestion, of inhalation. Hazardous in case of skin contact (corrosive, permeator), of eye contact (corrosive).
**Special Remarks on Toxicity to Animals:** Lowest Published Lethal Dose[Rat] - Route: Inhalation; Dose: 1960 mg/m³/10M
**Special Remarks on Chronic Effects on Humans:**
May cause adverse reproductive effects (paternal effects, effects on fertility (post-implantation mortality, fetotoxicity) and birth defects based on animal data. May cause cancer based on animal data. May affect genetic material. Animal: passes through placental barrier, excreted in maternal milk.
**Special Remarks on other Toxic Effects on Humans:**
Acute Potential Health Effects: Skin: Causes skin irritation with possible burns, especially if skin is wet or moist. May be absorbed by the skin. Eyes: May cause severe irritation with possible eye burns and irreversible eye injury. May cause corneal ulceration, and opacification, and glaucoma and severe iritis. Eye or skin contact may result in mild, moderate, or severe irritation and burns depending on the concentration and duration of exposure. Inhalation: May cause severe respiratory tract irritation, and may affect behavior. Symptoms may include sore throat, coughing, shortness of breath, dyspnea, chest tightness, headache, 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. May cause severe digestive tract irritation with nausea, vomiting, diarrhea abdominal pain, possible burns (corrosion and permanent tissue destruction) of the esophagus and digestive tract and perforation of the stomach and possible death. It may also affect behavior /Central nervous system (central nervous system depression), the urinary system (kidney damage - hematuria, oliguria, renal failure), cardiovascular system, respiration (dyspnea), metabolism, pancreas (elevated amylase, and glucose levels), liver enzymes, and blood (changes in white and red blood cell count, changes in serum composition). Zinc chloride is irritating or caustic depending on the concentration ingested.

Chronic Potential Health Effects: Skin: Prolonged or repeated skin contact may cause defatting and dermatitis.

12. Ecological information

Ecotoxicity: Not available.
BOD5 and COD: Not available.
Products of Biodegradation: Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.
Toxicity of the Products of Biodegradation: The products of degradation are less toxic than the product itself.
Special Remarks on the Products of Biodegradation: Not available.

13. Disposal considerations

Waste Disposal: Waste must be disposed of in accordance with federal, state and local environmental control regulations.

14. Transport information

DOT Classification: Class 8: Corrosive material
Identification: Zinc Chloride, anhydrous UNNA: 2331 PG: III
Special Provisions for Transport: Not available.

15. Regulatory information

Federal and State Regulations:
Other Regulations:
EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.
Other Classifications:
WHMIS (Canada):
CLASS D-1B: Material causing immediate and serious toxic effects (TOXIC). CLASS D-2A: Material causing other toxic effects (VERY TOXIC). CLASS E: Corrosive solid.
DSCL (EEC):
HMIS (U.S.A.):
Health Hazard: 3
Fire Hazard: 0
Reactivity: 0
Personal Protection: j
National Fire Protection Association (U.S.A.):
Health: 3
Flammability: 0
Reactivity: 0
Specific hazard:
Protective Equipment:
Gloves. Synthetic apron. Vapor and dust respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Splash goggles.
16. Other information

Reason for the revision: General update.
Date: 15/7/2014

Revision #1
Date: 02/8/2014

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