1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Zinc chloride

Product Number : 429430
Brand : Aldrich

Supplier : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO  63103
USA

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

Emergency Phone # (For both supplier and manufacturer) : (314) 776-6555

Preparation Information : Sigma-Aldrich Corporation
Product Safety - Americas Region
1-800-521-8956

2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards
Target Organ Effect, Toxic by ingestion, Corrosive

Target Organs
Liver, Kidney

GHS 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)

GHS Label elements, including precautionary statements

Pictogram
![Pictogram]

Signal word : Danger

Hazard statement(s)
H302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)
P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P305 + P351 + P338 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.
P501 Dispose of contents/ container to an approved waste disposal plant.

HMIS Classification
Health hazard: 3
Chronic Health Hazard: *
Flammability: 0
Physical hazards: 0

NFPA Rating
Health hazard: 3
Fire: 0
Reactivity Hazard: 0

Potential Health Effects
- **Inhalation**: May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.
- **Skin**: May be harmful if absorbed through skin. Causes skin burns.
- **Eyes**: Causes eye burns.
- **Ingestion**: Toxic if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Component</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zinc chloride</td>
<td></td>
</tr>
<tr>
<td>CAS-No.</td>
<td>7646-85-7</td>
</tr>
<tr>
<td>EC-No.</td>
<td>231-592-0</td>
</tr>
<tr>
<td>Index-No.</td>
<td>030-003-00-2</td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

**General advice**
Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

**If inhaled**
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

**In case of skin contact**
Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Consult a physician.

**In case of eye contact**
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. Continue rinsing eyes during transport to hospital.

**If swallowed**
Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIREFIGHTING MEASURES

**Conditions of flammability**
Not flammable or combustible.

**Suitable extinguishing media**
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**Special protective equipment for firefighters**
Wear self-contained breathing apparatus for fire fighting if necessary.

**Hazardous combustion products**
Hazardous decomposition products formed under fire conditions. - Hydrogen chloride gas, Zinc/zinc oxides

**Further information**
The product itself does not burn.

6. ACCIDENTAL RELEASE MEASURES
**Personal precautions**
Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

**Environmental precautions**
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

**Methods and materials for containment and cleaning up**
Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

### 7. HANDLING AND STORAGE

**Precautions for safe handling**
Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed.

**Conditions for safe storage**
Handle under nitrogen, protect from moisture. Store under nitrogen. Keep container tightly closed in a dry and well-ventilated place.

strongly hygroscopic. Keep in a dry place.

### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Components with workplace control parameters**

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Value</th>
<th>Control parameters</th>
<th>Basis</th>
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<tbody>
<tr>
<td>Zinc chloride</td>
<td>7646-85-7</td>
<td>TWA</td>
<td>1 mg/m³</td>
<td>USA. ACGIH Threshold Limit Values (TLV)</td>
</tr>
<tr>
<td>Remarks</td>
<td></td>
<td></td>
<td></td>
<td>Upper Respiratory Tract &amp; Lower Respiratory Tract irritation</td>
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<tr>
<td></td>
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**Personal protective equipment**

**Respiratory protection**
Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

**Hand protection**
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove’s outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

**Immersion protection**
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: > 480 min
Material tested: Dermatril® (Aldrich Z677272, Size M)

Splash protection
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: > 30 min
Material tested: Dermatril® (Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 873000, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an Industrial Hygienist familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

**Eye protection**
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

**Skin and body protection**
Complete suit protecting against chemicals. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

**Hygiene measures**
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

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9. PHYSICAL AND CHEMICAL PROPERTIES

**Appearance**
- Form: powder
- Colour: white

**Safety data**
- pH: 5 at 100 g/l at 20 °C (68 °F)
- Melting point/freezing point: Melting point/range: 293 °C (559 °F)
- Boiling point: 732 °C (1,350 °F) at 1,013 hPa (760 mmHg)
- Flash point: no data available
- Ignition temperature: no data available
- Autoignition temperature: no data available
- Lower explosion limit: no data available
- Upper explosion limit: no data available
- Vapour pressure: 1 hPa (1 mmHg) at 428 °C (802 °F)
- Density: 2.907 g/cm3
- Water solubility: soluble
- Partition coefficient: n-octanol/water: no data available
- Relative vapour density: no data available
- Odour: no data available
- Odour Threshold: no data available
10. STABILITY AND REACTIVITY

Chemical stability
Stable under recommended storage conditions.

Possibility of hazardous reactions
no data available

Conditions to avoid
Exposure to moisture.

Materials to avoid
Strong oxidizing agents

Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Hydrogen chloride gas, Zinc/zinc oxides
Other decomposition products - no data available

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Oral LD50
LD50 Oral - rat - 350 mg/kg

Inhalation LC50
no data available

Dermal LD50
no data available

Other information on acute toxicity
no data available

Skin corrosion/irritation
no data available

Serious eye damage/eye irritation
no data available

Respiratory or skin sensitization
no data available

Germ cell mutagenicity
no data available

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity

no data available

Teratogenicity
no data available
Specific target organ toxicity - single exposure (Globally Harmonized System)
no data available

Specific target organ toxicity - repeated exposure (Globally Harmonized System)
no data available

Aspiration hazard
no data available

Potential health effects

Inhalation May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.

Ingestion Toxic if swallowed.

Skin May be harmful if absorbed through skin. Causes skin burns.

Eyes Causes eye burns.

Signs and Symptoms of Exposure
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Synergistic effects
no data available

Additional Information
RTECS: ZH1400000

12. ECOLOGICAL INFORMATION

Toxicity
Toxicity to fish LC50 - Cyprinus carpio (Carp) - 0.4 - 2.2 mg/l - 96.0 h
Toxicity to daphnia and other aquatic invertebrates EC50 - Daphnia magna (Water flea) - 0.2 mg/l - 48 h

Growth inhibition LOEC - Pseudokirchneriella subcapitata - 12.5 mg/l - 96 h

Persistence and degradability
no data available

Bioaccumulative potential
Bioaccumulation Pimephales promelas (fathead minnow) - 63 d
Bioconcentration factor (BCF): 21,000

Mobility in soil
no data available

PBT and vPvB assessment
no data available

Other adverse effects
An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Very toxic to aquatic life with long lasting effects.

13. DISPOSAL CONSIDERATIONS

Product
Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging
Dispose of as unused product.
DOT (US)
UN number: 2331  Class: 8  Packing group: III
Proper shipping name: Zinc chloride, anhydrous
Reportable Quantity (RQ): 1000 lbs
Marine pollutant: No
Poison Inhalation Hazard: No

IMDG
UN number: 2331  Class: 8  Packing group: III  EMS-No: F-A, S-B
Proper shipping name: ZINC CHLORIDE, ANHYDROUS
Marine pollutant: No

IATA
UN number: 2331  Class: 8  Packing group: III
Proper shipping name: Zinc chloride, anhydrous

15. REGULATORY INFORMATION

OSHA Hazards
Target Organ Effect, Toxic by ingestion, Corrosive

SARA 302 Components
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
The following components are subject to reporting levels established by SARA Title III, Section 313:

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SARA 311/312 Hazards
Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

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Pennsylvania Right To Know Components

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New Jersey Right To Know Components

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California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Further information
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The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a
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