Zinc Chloride MSDS

Product Name and Identification

- **Product Name**: Zinc Chloride
- **Chemical Formula**: $ZnCl_2$
- **CAS Number**: 7646-85-7
- **Relevant Uses**: Used in galvanizing, textile processing, water treatment, and as a flux in soldering.
- **Manufacturer/Supplier**: [Insert Manufacturer Information]
- **Emergency Contact Number**: [Insert Emergency Contact Information]

Composition/Ingredients

- **Chemical Name**: Zinc Chloride
- **Concentration**: ≥98%
- **Synonyms**: Zinc Dichloride
- **CAS Number**: 7646-85-7
- **EC Number**: 231-592-0

Hazards Identification

- **Classification**:
  - Corrosive to metals (Category 1)
  - Acute toxicity (Category 4, oral)
  - Skin corrosion (Category 1B)
  - Serious eye damage (Category 1)
- **Hazard Statements**:
  - H290: May be corrosive to metals.
  - H302: Harmful if swallowed.
  - H314: Causes severe skin burns and eye damage.
- **Precautionary Statements**:
  - P280: Wear protective gloves, protective clothing, and eye/face protection.
  - P301 + P330 + P331: IF SWALLOWED, rinse mouth. Do NOT induce vomiting.
  - P303 + P361 + P353: IF ON SKIN (or hair), remove all contaminated clothing and rinse skin thoroughly with water.
  - P305 + P351 + P338: IF IN EYES, rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.

First Aid Measures

- **General Advice**:

    - Seek immediate medical attention in all cases of exposure. Provide this data sheet to the medical professional.
- **If Inhaled**:
    - Move the person to fresh air. Keep them comfortable. If breathing difficulties persist, seek immediate medical attention.
- **If on Skin**:
    - Rinse affected area with plenty of water. Remove contaminated clothing and wash thoroughly with soap. Seek medical attention for burns or persistent irritation.
- **If in Eyes**:
    - Rinse with water for at least 15 minutes, keeping the eyelids open to ensure proper cleaning. Seek immediate medical attention.
- **If Swallowed**:
    - Rinse mouth with water. Do not induce vomiting unless advised to do so by medical personnel. Seek immediate medical attention.

Handling and Storage

- **Handling**:
    - Avoid contact with skin, eyes, and clothing. Handle in a well-ventilated area. Prevent the generation of dust and avoid inhalation of fumes.
    - Use appropriate protective equipment.
- **Storage**:
    - Store in a cool, dry location in a tightly sealed container. Keep away from moisture and incompatible substances like strong oxidizers and acids.

Exposure Controls/Personal Protection

- **Exposure Limits**:
    - OSHA PEL (TWA): 1 mg/m^3 (fume)
    - ACGIH TLV (TWA): 1 mg/m^3 (fume)
- **Personal Protective Equipment (PPE)**:
    - **Respiratory Protection**:
        - Use an approved respirator if exposure limits are exceeded or if fumes are present.
    - **Eye Protection**:
        - Use chemical safety goggles or a full-face shield.
    - **Skin Protection**:
        - Wear chemical-resistant gloves and long-sleeved protective clothing.
    - **General Hygiene**:
        - Wash hands after handling. Contaminated clothing should be laundered before reuse.

Physical and Chemical Properties

- **Appearance**: White crystalline powder or granules

- **Odor**: Odorless
- **pH** (aqueous solution): Strongly acidic
- **Melting Point**: 290°C
- **Boiling Point**: ~732°C
- **Solubility**:
    - Highly soluble in water, with a heat-releasing reaction. Soluble in alcohol and glycerin.
- **Density** (at 20°C): ~2.91 g/cm³
- **Vapor Pressure** (25°C): Negligible

Stability and Reactivity

- **Stability**:
    - Stable under recommended storage conditions. Reacts with moisture to form an acidic solution.
- **Reactivity**:
    - Reacts strongly with water, acids, and oxidizing agents.
- **Conditions to Avoid**:
    - Heat, moisture, and incompatible substances.
- **Hazardous Decomposition Products**:
    - Emits toxic fumes such as hydrogen chloride and zinc oxide when heated or decomposing.

Toxicological Information

- **Acute Toxicity**:
    - Oral LD50 (rat): ~350 mg/kg
    - Skin LD50 (rabbit): ~2000 mg/kg (estimated)
- **Skin Corrosion/Irritation**:
    - Severe irritation with the potential for burns.
- **Eye Damage**:
    - Causes irreversible damage, including risk of blindness with prolonged exposure.
- **Chronic Effects**:
    - Prolonged or repeated exposure can lead to irritation of the respiratory tract and chronic skin conditions.

Disposal Considerations

- **Waste Treatment Methods**:
    - Dispose of unused material and contaminated packaging in accordance with local, regional, and national regulations.
    - Avoid release into drains, waterways, or soil.
- **Packaging**:
    - Empty containers should be thoroughly cleaned before disposal or recycling. Handle as hazardous waste until decontamination.