ZINC CHLORIDE, Solutions to 1.0 M
MATERIAL SAFETY DATA SHEET

INTEGRA Chemical Company
1216 6th Ave N
Kent WA 98032
Phone: 253-479-7000

24 Hour Emergency Response: CHEMTREC 800-424-9300 (Outside USA 703-527-3887)

Product Identification

Product Name: ZINC CHLORIDE, Solutions to 1.0 M
Synonyms:
Chemical Formula: Mixture
Formula Weight: NA
Chemical Family: Laboratory solution
Integra Product Numbers: Z202.8N

Hazard Overview

HMIS Rating: NA NFPA Rating: NE
Warning Label: WARNING!
Contact causes severe irritation or burns. Avoid contact with skin, eyes and clothing. Use only with adequate ventilation. Wash thoroughly after handling. Harmful if swallowed. Wash thoroughly after handling.

Components

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS #</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>07732-18-5</td>
<td>&gt; 89.6</td>
</tr>
<tr>
<td>Zinc chloride</td>
<td>07646-85-7</td>
<td>&lt; 10.4</td>
</tr>
</tbody>
</table>

Physical Data

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boiling Point:</td>
<td>NA</td>
</tr>
<tr>
<td>Melting Point:</td>
<td>NA</td>
</tr>
<tr>
<td>Vapor Pressure:</td>
<td>NA</td>
</tr>
<tr>
<td>Specific Gravity:</td>
<td>1.001</td>
</tr>
<tr>
<td>Evaporation Rate:</td>
<td>NA</td>
</tr>
<tr>
<td>Vapor Density:</td>
<td>NA Air = 1</td>
</tr>
<tr>
<td>Solubility:</td>
<td>Miscible with water.</td>
</tr>
<tr>
<td>Appearance and Odor:</td>
<td>Clear, colorless liquid.</td>
</tr>
</tbody>
</table>

Fire and Explosion Data

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flash Point:</td>
<td>NA Test Method:</td>
</tr>
<tr>
<td>Auto-ignition Temperature:</td>
<td>NA</td>
</tr>
<tr>
<td>Flammable Limits (% by volume in air):</td>
<td>Upper: NA Lower: NA</td>
</tr>
<tr>
<td>Fire Extinguishing Media:</td>
<td>Material is not flammable. Use extinguishing media suitable to surrounding materials.</td>
</tr>
<tr>
<td>Special Firefighting Procedures:</td>
<td>Use water to cool nearby containers and structures. Wear full protective equipment, including suitable respiratory protection.</td>
</tr>
<tr>
<td>Unusual Fire and Explosion Hazards:</td>
<td>None identified</td>
</tr>
</tbody>
</table>

Health Hazard Information

Effects of Overexposure

Skin Contact:
ZINC CHLORIDE, Solutions to 1.0 M
MATERIAL SAFETY DATA SHEET

INTEGRA Chemical Company
1216 6th Ave N
Kent WA 98032
Phone: 253-479-7000

24 Hour Emergency Response: CHEMTREC 800-424-9300 (Outside USA 703-527-3887)

MSDS Number: Z202.8N
Revision Date: 16-Apr-08
Revision No.: 004

Health Hazard Information

Effects of Overexposure

Skin Contact:
Corrosive material. Contact may cause severe burns.

Eye Contact:
Contact may burn or damage the eyes.

Ingestion:
Harmful if swallowed. Ingestion may cause nausea, vomiting and gastrointestinal irritation and burns to the mouth and throat.

Inhalation:
None Identified

Chronic Effects of Overexposure:
None Identified

Exposure Limits:

<table>
<thead>
<tr>
<th>Component</th>
<th>TWA</th>
<th>STEL</th>
<th>Ceiling</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>NE</td>
<td>NE</td>
<td>NE</td>
</tr>
<tr>
<td>Zinc chloride</td>
<td>(fume) 1 mg/m³</td>
<td>NE</td>
<td>NE</td>
</tr>
<tr>
<td>ACGIH TLV</td>
<td>TWA</td>
<td>STEL</td>
<td>Ceiling</td>
</tr>
<tr>
<td>Water</td>
<td>NE</td>
<td>NE</td>
<td>NE</td>
</tr>
<tr>
<td>Zinc chloride</td>
<td>(fume) 1 mg/m³</td>
<td>(fume) 2 mg/m³</td>
<td>NE</td>
</tr>
</tbody>
</table>

Toxicity Data:

<table>
<thead>
<tr>
<th>Component</th>
<th>LD50 (oral, rat)</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Zinc chloride</td>
<td>350 mg/kg</td>
<td></td>
</tr>
</tbody>
</table>

Medical Conditions Generally Aggravated by Exposure:
None Identified

Target Organs:
None Identified

Reproductive Effects:
None Identified

Carcinogenicity:
None Identified

<table>
<thead>
<tr>
<th>Component</th>
<th>NTP Listing</th>
<th>IARC Listing</th>
<th>OSHA Regulated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>No listing</td>
<td>No Listing</td>
<td></td>
</tr>
<tr>
<td>Zinc chloride</td>
<td>No listing</td>
<td>No Listing</td>
<td></td>
</tr>
</tbody>
</table>

Emergency First Aid Procedures

Skin Contact:
Flush skin with plenty of water. Seek medical attention.

Eye Contact:
Flush with water for at least 15 minutes. Seek immediate medical attention.

Inhalation:
Remove victim to fresh air. If not breathing, give artificial respiration. If breathing is difficult administer oxygen. Seek
Emergency First Aid Procedures

Inhalation:
  medical attention.

Ingestion:
  Do not induce vomiting. If victim is conscious, give water. Never give anything by mouth to an unconscious person. Seek immediate medical attention.

Additional First aid and Treatment Notes:
  No information available

Reactivity Data

Stability: Stable
Hazardous Polymerization: Will Not Occur
Incompatibilities:
  Cyanides and sulfides.
Decomposition Products:
  Possibly chlorine and zinc oxide.
Conditions to Avoid:
  Contamination.

Spill and Disposal Procedures

Spill and Leak Procedures:
  Prevent spread of spill. Absorb with sand or inert material. Sweep or scoop into a disposal container. Flush spill area with water. Wear suitable protective equipment.

Disposal Procedures:
  Dispose in accordance with all Local, State and Federal regulations.

Protective Equipment

Ventilation:
  Use general or local exhaust ventilation to meet TLV and PEL requirements.

Respiratory Protection:
  None required where adequate ventilation conditions exist. If airborne concentration exceeds PEL or TLV a dust/mist respirator is recommended.

Skin and Eye Protective Equipment:
  Safety goggles, protective clothing and gloves. Maintain an eyewash station and safety shower nearby.

Storage and Handling Precautions

Storage Area: GENERAL
  Store in a cool, dry area. Protect containers from physical damage. Protect material from contamination. Sensitive standard, handle carefully.

Transportation Information

☑ Regulated Material domestic ground transportation
  (reference: CFR Title 49, Transportation)
Transportation Information

Proper Shipping Name: Zinc chloride, solution
UN or NA Identification number: UN1840
Hazard Class and Label: 8 Corrosive
Packing Group: III
Subsidiary Risk and Label:

 ✓ Regulated Material via Air Transportation
(refernce: ICAO Technical Instructions for the Safe Transport of Dangerous Goods by Air)

Proper Shipping Name: Zinc chloride, solution
UN Identification Number: UN1840
Hazard Class and Label: 8 Corrosive
Packing Group: III
Subsidiary Risk and Label:

Packing Instruction
Max net qty per package
Passenger Aircraft: 818/Y818 5/1 L
Cargo Aircraft: 820 60 L

Regulatory Information

<table>
<thead>
<tr>
<th>Component</th>
<th>TSCA Inventory</th>
<th>CERCLA RQ</th>
<th>SARA EHS TPQ</th>
<th>SARA 313 Toxic Release de minimus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zinc chloride</td>
<td>✔</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SARA Hazard Categories:
- Acute
- Chronic
- Flammability
- Pressure
- Reactivity

Clean Air Act Categories:
- SOCMI
- HAP
- Volatile HAP
- Organic HAP
- Ozone Depleting

Water
- 
- 
- 
- 

Zinc chloride
- 
- 
- 
- 

MSDS Revision History:
002 - Changed header phone number
003 - Format revisions; updated header phone number
004 - Updated Header Information

NE = Not established, NA = Not applicable or Not available
The information presented above is offered for informational purposes only. This MSDS, and the associated product, is intended for use only by technically qualified persons, and at their own discretion and risk. Since conditions and manner of use are outside the control of Integra Chemical Company, we make no warranties, either expressed or implied, and assume no liability in connection with any use of this information.

***** END OF MSDS *****