SAFETY DATA SHEET  
according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

SECTION 1. Identification

Product identifier
- Product number: 116763
- Product name: Zinc chloride Technipur™
- CAS-No.: 7646-85-7

Relevant identified uses of the substance or mixture and uses advised against
- Identified uses: Pharmaceutical production, Reagent for analysis

Details of the supplier of the safety data sheet
- Company: EMD Millipore Corporation | 290 Concord Road, Billerica, MA 01821, United States of America | General Inquiries: +1-978-715-4321 |
  Monday to Friday, 9:00 AM to 4:00 PM Eastern Time (GMT-5)
- Emergency telephone:
  - 800-424-9300 CHEMTREC (USA)
  - +1-703-527-3887 CHEMTREC (International)
  - 24 Hours/day; 7 Days/week

SECTION 2. Hazards identification

GHS Classification
- Acute toxicity, Category 4, Oral, H302
- Skin corrosion, Category 1B, H314
- Acute aquatic toxicity, Category 1, H400
- Chronic aquatic toxicity, Category 1, H410

For the full text of the H-Statements mentioned in this Section, see Section 16.

GHS-Labeling

Hazard pictograms

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
P273  Avoid release to the environment.
P280  Wear protective gloves/ protective clothing/ eye protection/ face protection.
P301 + P330 + P331  IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P305 + P351 + P338  IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P310  IF exposed or concerned: immediately call a POISON CENTER or doctor/ physician.

OSHA Hazards
This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200). This information is based on 29 CFR 1910.1200 criteria prior to adoption of the GHS and may deviate from the GHS information.

Other hazards
None known.

SECTION 3. Composition/information on ingredients

Formula  ZnCl₂  Cl₂Zn (Hill)
Molar mass  136.30 g/mol

Hazardous ingredients

Chemical Name ( Concentration)
CAS-No.
zinc chloride ( >= 90 % - <= 100 % )
7646-85-7

Exact percentages are being withheld as a trade secret.

SECTION 4. First aid measures

Description of first-aid measures

General advice
First aider needs to protect himself.

Inhalation
After inhalation: fresh air. Call in physician.

Skin contact
In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Call a physician immediately.

Eye contact
After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist.

Ingestion
After swallowing: make victim drink water (two glasses at most), avoid vomiting (risk of perforation!). Call a physician immediately. Do not attempt to neutralize.

Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed
SAFETY DATA SHEET
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Product number  116763  Version 1.2
Product name Zinc chloride Technipur™

Irritation and corrosion, bronchitis, Cough, Shortness of breath, Diarrhea, Nausea, Vomiting, cardiovascular disorders, collapse, metallic taste
Risk of blindness!

Indication of any immediate medical attention and special treatment needed
No information available.

SECTION  5. Fire-fighting measures

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

Unsuitable extinguishing media
For this substance/mixture no limitations of extinguishing agents are given.

Special hazards arising from the substance or mixture
Not combustible.
Ambient fire may liberate hazardous vapors.
Fire may cause evolution of:
Hydrogen chloride gas

Advice for firefighters
Special protective equipment for fire-fighters
Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

Further information
Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION  6. Accidental release measures

Personal precautions, protective equipment and emergency procedures
Advice for non-emergency personnel: Avoid inhalation of dusts. Avoid substance contact.
Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders: Protective equipment see section 8.

Environmental precautions
Do not empty into drains.

Methods and materials for containment and cleaning up
Cover drains. Collect, bind, and pump off spills.
Observe possible material restrictions (see sections 7 and 10).
Take up dry. Dispose of properly. Clean up affected area. Avoid generation of dusts.

SECTION  7. Handling and storage

Precautions for safe handling
Observe label precautions.
SAFETY DATA SHEET
according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Product number 116763  Version 1.2
Product name Zinc chloride Technipur™

Conditions for safe storage, including any incompatibilities
Tightly closed. Dry.
Store at +5°C to +30°C (+41°F to +86°F).

SECTION 8. Exposure controls/personal protection

Exposure limit(s)

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>Basis</th>
<th>Value</th>
<th>Threshold limits</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>zinc chloride 7646-85-7</td>
<td>ACGIH Time Weighted Average (TWA):</td>
<td>1 mg/m³</td>
<td>Form of exposure: Fume.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Short Term Exposure Limit (STEL):</td>
<td>2 mg/m³</td>
<td>Form of exposure: Fume.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>NIOSH/GUIDE Recommended exposure limit (REL):</td>
<td>1 mg/m³</td>
<td>Form of exposure: Fume.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Short Term Exposure Limit (STEL):</td>
<td>2 mg/m³</td>
<td>Form of exposure: Fume.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>OSHA_TRANS PEL:</td>
<td>1 mg/m³</td>
<td>Form of exposure: Fume.</td>
<td></td>
</tr>
</tbody>
</table>

Engineering measures
Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

Individual protection measures
Protective clothing should be selected specifically for the workplace, depending on concentration and quantity of the hazardous substances handled. The chemical resistance of the protective equipment should be inquired at the respective supplier.

Hygiene measures
Immediately change contaminated clothing. Apply skin-protective barrier cream. Wash hands and face after working with substance.

Eye/face protection
Tightly fitting safety goggles

Hand protection
Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Other protective equipment: protective clothing

Respiratory protection
required when dusts are generated.
Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
SECTION 9. Physical and chemical properties

Physical state  solid

Color  white

Odor  odorless

Odor Threshold  not applicable

pH  ca. 5
    at  100 g/l
    68 °F (20 °C)

Melting point  283 °C

Boiling point/boiling range  1350 °F (732 °C)
    at  1,013 hPa

Flash point  does not flash

Evaporation rate  No information available.

Flammability (solid, gas)  The product is not flammable.

Lower explosion limit  not applicable

Upper explosion limit  not applicable

Vapor pressure  1.33 hPa
    at  802 °F (428 °C)

Relative vapor density  No information available.

Density  2.91 g/cm³
    at  77 °F (25 °C)

Relative density  No information available.

Water solubility  4,320 g/l
    at  77 °F (25 °C)

Partition coefficient: n-octanol/water  No information available.

Autoignition temperature  No information available.

Decomposition temperature  No information available.

Viscosity, dynamic  No information available.
Explosive properties  Not classified as explosive.

Oxidizing properties  none

Ignition temperature  not combustible

Bulk density  ca. 1,400 - 1,800 kg/m³

SECTION 10. Stability and reactivity
Reactivity
See below

Chemical stability
The product is chemically stable under standard ambient conditions (room temperature).

Possibility of hazardous reactions
Violent reactions possible with:
sodium, Strong oxidizing agents

Conditions to avoid
no information available

Incompatible materials
various metals

Hazardous decomposition products
in the event of fire: See section 5.

SECTION 11. Toxicological information
Information on toxicological effects

Likely route of exposure
Eye contact, Skin contact, Ingestion

Target Organs
Eyes
Skin
cardiovascular system
Lungs
Digestive organs
head
Respiratory organs
pharynx

Acute oral toxicity
LD50 rat: 350 mg/kg (RTECS)

absorption
Symptoms: If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the esophagus and the stomach., Nausea, Vomiting, strong pain (risk of perforation!)
Acute inhalation toxicity
LCLO rat: 2 mg/l; 10 min (IUCLID)
Corrosive to respiratory system

Symptoms: mucosal irritations, Cough, Shortness of breath, Possible damages:, damage of respiratory tract, bronchitis, Necrosis, Inhalation may lead to the formation of oedemas in the respiratory tract.

Skin irritation
Causes burns.

Eye irritation
Causes serious eye damage.
Risk of blindness!

Genotoxicity in vitro
Mutagenicity (mammal cell test): chromosome aberration.
Result: positive (Lit.)

Specific target organ systemic toxicity - single exposure
The substance or mixture is not classified as specific target organ toxicant, single exposure.

Specific target organ systemic toxicity - repeated exposure
The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Aspiration hazard
Regarding the available data the classification criteria are not fulfilled.

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

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

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

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

Further information
Systemic effects:
After uptake:
metallic taste, drop in blood pressure, tachycardia, cardiovascular disorders, Diarrhea, Circulatory collapse, disturbed electrolyte balance.
Causes impaired function of:
Kidney
Handle in accordance with good industrial hygiene and safety practice.
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SECTION 12. Ecological information

Ecotoxicity

Toxicity to fish
LC50  Danio rerio (zebra fish):  38 mg/l;  96 h  (IUCLID)

Toxicity to daphnia and other aquatic invertebrates
EC50  Daphnia magna (Water flea):  0.33 mg/l;  48 h  (IUCLID)

Toxicity to algae
IC0  Pseudokirchneriella subcapitata (green algae):  0.1 mg/l;  96 h
OECD Test Guideline 201

Toxicity to bacteria
EC50  activated sludge:  45 mg/l (referred to the cation) (IUCLID)

Persistence and degradability

Biodegradability

The methods for determining the biological degradability are not applicable to inorganic substances.

Bioaccumulative potential
No information available.

Mobility in soil
No information available.

Additional ecological information
Hazard for drinking water supplies.
Discharge into the environment must be avoided.

SECTION 13. Disposal considerations

The information presented only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. Disposal should be in accordance with applicable regional, national and local laws and regulations.

SECTION 14. Transport information

Land transport (DOT)
UN number  UN 2331
Proper shipping name  ZINC CHLORIDE, ANHYDROUS
Class  8
Packing group  III
Environmentally hazardous  --

Air transport (IATA)
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according to the (US) Hazard Communication Standard (29 CFR 1910.1200)  

Product number  116763  
Product name  Zinc chloride Technipur™  

UN number  UN  2331  
Proper shipping name  ZINC CHLORIDE, ANHYDROUS  
Class  8  
Packing group  III  
Environmentally hazardous  --  
Special precautions for user  no  

Sea transport (IMDG)  
UN number  UN  2331  
Proper shipping name  ZINC CHLORIDE, ANHYDROUS  
Class  8  
Packing group  III  
Environmentally hazardous  --  
Special precautions for user  yes  
EmS  F-A  S-B  

SECTION  15. Regulatory information  
United States of America  

OSHA Hazards  
Toxic by ingestion  
Corrosive to skin  
Corrosive to eyes  
Corrosive by inhalation.  

Target organ effects  

This information is based on 29 CFR 1910.1200 criteria prior to adoption of the GHS, and may deviate from the GHS information on the label and in section 2.  

SARA 311/312 Hazards  
Acute Health Hazard  
Chronic Health Hazard  

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

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>UN Number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>zinc chloride</td>
<td>7646-85-7</td>
<td>100</td>
</tr>
</tbody>
</table>

SARA 302  
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.
Clean Water Act
The following Hazardous Substances are listed under the U.S. CleanWater Act, Section 311, Table 116.4A:
Ingredients
zinc chloride
The following Hazardous Chemicals are listed under the U.S. CleanWater Act, Section 311, Table 117.3:
Ingredients
zinc chloride

DEA List I
Not listed
DEA List II
Not listed

US State Regulations
Massachusetts Right To Know
Ingredients
zinc chloride
Pennsylvania Right To Know
Ingredients
zinc chloride
New Jersey Right To Know
Ingredients
zinc chloride

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

Notification status
TSCA: All components of the product are listed in the TSCA-inventory.
DSL: All components of this product are on the Canadian DSL.

SECTION 16. Other information
Training advice
Provide adequate information, instruction and training for operators.

Full text of H-Statements referred to under sections 2 and 3.
H302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage.
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.

Key or legend to abbreviations and acronyms used in the safety data sheet
Used abbreviations and acronyms can be looked up at www.wikipedia.org.
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Product name  Zinc chloride Technipur™

Revision Date 08/01/2014

The information contained herein is based on the present state of our knowledge. It characterizes the product with regard to appropriate safety precautions. It does not represent a warranty of any product properties and we assume no liability for any loss or injury which may result from the use of this information. Users should conduct their own investigations to determine the suitability of the information.

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