



# MATERIAL SAFETY DATA SHEET

## 1. Product and Company Identification

<b>Material name</b>	<b>ZINC CHLORIDE</b>
<b>Version #</b>	02
<b>Revision date</b>	08-30-2011
<b>CAS #</b>	7646-85-7
<b>Product Codes</b>	<b>J.T.Baker: 4320, 4321, 4322, 4326</b> <b>Macron: 8772, 8780</b>
<b>Synonym(s)</b>	Zinc Chloride, Zinc Dichloride, Zinc Butter
<b>Manufacturer</b>	Avantor Performance Materials, Inc.
<b>Address</b>	3477 Corporate Parkway Suite #200 Center Valley, PA 18034 US
<b>Customer Service</b>	855-282-6867
<b>24 Hour Emergency</b>	908-859-2151
<b>Chemtrec</b>	800-424-9300

## 2. Hazards Identification

<b>Emergency overview</b>	DANGER  Corrosive. Causes severe skin and eye burns. Causes digestive tract burns. Harmful if inhaled or swallowed. Dust or vapor extremely irritating to the eyes and respiratory tract.
<b>OSHA regulatory status</b>	This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication).
<b>Potential health effects</b>	
<b>Routes of exposure</b>	Ingestion. Inhalation. Skin contact. Eye contact.
<b>Eyes</b>	Corrosive. Causes severe eye burns. Dust or splashes from the mixture may cause permanent eye damage.
<b>Skin</b>	Corrosive. Causes severe skin burns.
<b>Inhalation</b>	Harmful if inhaled. Corrosive. May cause damage to mucous membranes in nose, throat, lungs and bronchial system.
<b>Ingestion</b>	Harmful if swallowed. Corrosive. Ingestion may produce burns to the lips, oral cavity, upper airway, esophagus and possibly the digestive tract.
<b>Target organs</b>	Eyes. Skin. Lungs. Respiratory system. Liver.
<b>Chronic effects</b>	Corrosive. Prolonged contact causes serious tissue damage. May cause liver damage based on animal data.
<b>Potential environmental effects</b>	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

## 3. Composition / Information on Ingredients

Components	CAS #	Percent
ZINC CHLORIDE	7646-85-7	97 - 100

## 4. First Aid Measures

<b>First aid procedures</b>	
<b>Eye contact</b>	Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Call a physician or poison control center immediately. In case of irritation from airborne exposure, move to fresh air. Get medical attention immediately.

<b>Skin contact</b>	Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Call a physician or poison control center immediately. Wash clothing separately before reuse. Destroy or thoroughly clean contaminated shoes.
<b>Inhalation</b>	Move to fresh air. If breathing stops, provide artificial respiration. If breathing is difficult, give oxygen. Call a physician or poison control center immediately.
<b>Ingestion</b>	Call a physician or poison control center immediately. Do not induce vomiting. If vomiting occurs, the head should be kept low so that stomach vomit doesn't enter the lungs.
<b>Notes to physician</b>	Keep victim under observation. Treat symptomatically.
<b>General advice</b>	In the case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Show this safety data sheet to the doctor in attendance. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

## 5. Fire Fighting Measures

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<b>Flammable properties</b>	The product is not flammable. No unusual fire or explosion hazards noted.
<b>Extinguishing media</b>	
<b>Suitable extinguishing media</b>	Water spray. Carbon dioxide (CO2). Dry chemical powder. Foam.
<b>Unsuitable extinguishing media</b>	None known.
<b>Protection of firefighters</b>	
<b>Specific hazards arising from the chemical</b>	Fire may produce irritating, corrosive and/or toxic gases.
<b>Protective equipment and precautions for firefighters</b>	Use water spray to cool unopened containers. Self-contained breathing apparatus and full protective clothing must be worn in case of fire. Cool containers exposed to flames with water until well after the fire is out.
<b>Special protective equipment for fire-fighters</b>	Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask. Wear self-contained breathing apparatus with a full facepiece operated in the positive pressure demand mode when fighting fires.
<b>Specific methods</b>	In the event of fire and/or explosion do not breathe fumes.

## 6. Accidental Release Measures

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<b>Personal precautions</b>	Keep unnecessary personnel away. Wear appropriate protective equipment and clothing during clean-up. Keep upwind. Keep out of low areas. Ventilate closed spaces before entering them. Local authorities should be advised if significant spillages cannot be contained.
<b>Environmental precautions</b>	Do not allow to enter drains, sewers or watercourses. Prevent further leakage or spillage if safe to do so.
<b>Methods for containment</b>	Prevent entry into waterways, sewers, basements or confined areas. Stop leak if you can do so without risk. Dike the spilled material, where this is possible.
<b>Methods for cleaning up</b>	Avoid dust formation.  Large Spills: Sweep up or vacuum up spillage and collect in suitable container for disposal.  Small Spills: Sweep up and place in a clearly labeled container for chemical waste. Clean surface thoroughly to remove residual contamination.  Never return spills in original containers for re-use. Clean up in accordance with all applicable regulations. Neutralize spill area and washings with soda ash or lime. Collect in a non-combustible container for prompt disposal.

## 7. Handling and Storage

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<b>Handling</b>	Wear appropriate personal protective equipment. Do not breathe dust or vapor. Do not get in eyes, on skin, on clothing. Do not taste or swallow. Wash thoroughly after handling. Do not eat, drink or smoke when using the product. See Section 8 of the MSDS for Personal Protective Equipment.
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**Storage**

Keep tightly closed in a dry, cool and well-ventilated place.

**8. Exposure Controls / Personal Protection****ACGIH**

Material	Type	Value	Form
ZINC CHLORIDE (7646-85-7)	STEL	2.0000 mg/m3	Fume.
	TWA	1.0000 mg/m3	Fume.

**Occupational exposure limits****U.S. - OSHA**

Material	Type	Value	Form
ZINC CHLORIDE (7646-85-7)	PEL	1.0000 mg/m3	Fume.

**Engineering controls**

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

**Personal protective equipment****Eye / face protection**

Wear safety glasses with side shields (or goggles) and a face shield.

**Skin protection**

Wear appropriate chemical resistant clothing. Wear appropriate chemical resistant gloves.

**Respiratory protection**

If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. Respirator type: High-efficiency particulate respirator with full facepiece.

**General hygiene considerations**

Provide eyewash station and safety shower. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

**General**

Wear chemical protective equipment that is specifically recommended by the manufacturer. Launder contaminated clothing before reuse.

**9. Physical & Chemical Properties**

<b>Appearance</b>	Crystalline. Granular.
<b>Color</b>	White.
<b>Odor</b>	Odorless.
<b>Odor threshold</b>	Not available.
<b>Physical state</b>	Solid.
<b>Form</b>	Crystalline. Granular.
<b>pH</b>	1 (6 M Solution)
<b>Melting point</b>	554 °F (290 °C)
<b>Freezing point</b>	554 °F (290 °C)
<b>Boiling point</b>	1349.6 °F (732 °C)
<b>Flash point</b>	Not available.
<b>Flammability limits in air, upper, % by volume</b>	Not available.
<b>Flammability limits in air, lower, % by volume</b>	Not available.
<b>Specific gravity</b>	2.907
<b>Relative density</b>	Not available.
<b>Solubility (water)</b>	4350 g/l at 70°F
<b>Partition coefficient (n-octanol/water)</b>	Not available

<b>Auto-ignition temperature</b>	Not available.
<b>Molecular weight</b>	136.3 g/mol
<b>Molecular formula</b>	Cl <sub>2</sub> -Zn

## 10. Chemical Stability & Reactivity Information

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<b>Chemical stability</b>	Stable under normal temperature conditions.
<b>Conditions to avoid</b>	Do not allow water to get into container because of reaction.
<b>Incompatible materials</b>	Strong oxidizing agents. Bases, alkalies (organic). Potassium. Moisture.
<b>Hazardous decomposition products</b>	Hydrogen chloride. Zinc oxide.
<b>Possibility of hazardous reactions</b>	Hazardous polymerization does not occur.

## 11. Toxicological Information

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### Toxicological data

<b>Product</b>	<b>Test Results</b>
ZINC CHLORIDE (7646-85-7)	Acute Inhalation LC50 Rat: 1.975 mg/l 10.00 Minutes Acute Oral LD50 Rat: 350 mg/kg
<b>Sensitization</b>	Not a skin sensitizer.
<b>Acute effects</b>	Harmful if inhaled or swallowed. Strongly corrosive. May cause deep tissue damage. Vapors are corrosive. After some hours, injured persons may develop serious shortness of breath and lung edema.
<b>Local effects</b>	Causes severe burns.
<b>Chronic effects</b>	Corrosive. Prolonged contact causes serious tissue damage. May cause liver damage based on animal data.
<b>Carcinogenicity</b>	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.
<b>Skin corrosion/irritation</b>	Corrosive to skin and eyes.
<b>Epidemiology</b>	No epidemiological data is available for this product.
<b>Mutagenicity</b>	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
<b>Neurological effects</b>	No data available for this product.
<b>Reproductive effects</b>	Contains no ingredient listed as toxic to reproduction
<b>Symptoms and target organs</b>	Corrosive effects.
<b>Further information</b>	Danger of very serious irreversible effects. Symptoms may be delayed.

## 12. Ecological Information

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### Ecotoxicological data

<b>Product</b>	<b>Test Results</b>
ZINC CHLORIDE (7646-85-7)	EC50 Water flea (Daphnia magna): 0.1 mg/l 48.00 hours LC50 Inland silverside (Menidia beryllina): 0.03 mg/l 96.00 hours
<b>Ecotoxicity</b>	Expected to be very toxic to aquatic organisms. May cause long-term adverse effects in the environment. The product may affect the acidity (pH-factor) in water with risk of harmful effects to aquatic organisms.
<b>Persistence and degradability</b>	The product is not readily biodegradable.
<b>Partition coefficient (n-octanol/water)</b>	Not available

## 13. Disposal Considerations

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<b>Disposal instructions</b>	Dispose of this material and its container to hazardous or special waste collection point. Incinerate the material under controlled conditions in an approved incinerator. All wastes must be handled in accordance with local, state and federal regulations.
<b>Contaminated packaging</b>	Since emptied containers retain product residue, follow label warnings even after container is emptied. Offer rinsed packaging material to local recycling facilities.

## 14. Transport Information

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### DOT

**Basic shipping requirements:**

<b>UN number</b>	UN2331
<b>Proper shipping name</b>	Zinc chloride, anhydrous
<b>Hazard class</b>	8
<b>Packing group</b>	III

**Additional information:**

**Special provisions** IB8, IP3, T1, TP33

**Basic shipping requirements:**

**Labels required** 8

**Additional information:**

<b>Packaging exceptions</b>	None
<b>Packaging non bulk</b>	213
<b>Packaging bulk</b>	240
<b>Reportable quantity</b>	1000
<b>ERG number</b>	154

### IATA

**Basic shipping requirements:**

<b>UN number</b>	2331
<b>Proper shipping name</b>	Zinc chloride, anhydrous
<b>Hazard class</b>	8
<b>Packing group</b>	III

**Additional information:**

**ERG code** 8L

### IMDG

**Basic shipping requirements:**

<b>UN number</b>	2331
<b>Proper shipping name</b>	ZINC CHLORIDE, ANHYDROUS
<b>Hazard class</b>	8
<b>Packing group</b>	III



DOT



IATA



IMDG

## 15. Regulatory Information

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<b>US federal regulations</b>	This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200. All components are on the U.S. EPA TSCA Inventory List.
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**US EPCRA (SARA Title III) Section 313 - Toxic Chemical: De minimis concentration**

ZINC CHLORIDE (CAS 7646-85-7) 1.0 % N982

**US EPCRA (SARA Title III) Section 313 - Toxic Chemical: Listed substance**

ZINC CHLORIDE (CAS 7646-85-7) Listed. N982

**CERCLA (Superfund) reportable quantity**

ZINC CHLORIDE: 1000.0000

**Superfund Amendments and Reauthorization Act of 1986 (SARA)**

**Hazard categories**  
 Immediate Hazard - Yes  
 Delayed Hazard - Yes  
 Fire Hazard - No  
 Pressure Hazard - No  
 Reactivity Hazard - No

**Section 311 hazardous chemical**  
 Yes

**Clean Water Act (CWA)**  
 Hazardous substance  
 Priority pollutant  
 Toxic pollutant

**Inventory status**

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

\*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

**State regulations** This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

**US - New Jersey Community RTK (EHS Survey): Reportable threshold**

ZINC CHLORIDE (CAS 7646-85-7) 500 LBS

**US - Pennsylvania RTK - Hazardous Substances: Listed substance**

ZINC CHLORIDE (CAS 7646-85-7) Listed.

**Saf-T-Data**  
 Health: 3 - Severe (Life)  
 Flammability: 0 - None  
 Reactivity: 1 - Slight  
 Contact: 3 - Severe (Corrosive)  
 Lab Protective Equip: D - GOGGLES & SHIELD; LAB COAT & APRON; VENT HOOD; PROPER GLOVES  
 Storage Color Code: W - White (Corrosive)

**16. Labeling Info****Label Hazard Warning** DANGER

Corrosive. Causes severe skin and eye burns. Causes digestive tract burns. Harmful if inhaled or swallowed. Dust or vapor extremely irritating to the eyes and respiratory tract.

**Label Precautions**

Do not breathe dust. Do not get in eyes, on skin, or on clothing. Use only with adequate ventilation. Keep container closed. Wash thoroughly after handling.

**Label First Aid**

Immediately flush eyes with plenty of water for at least 15 minutes. Immediately flush skin with plenty of water. If gas/fume/vapor/dust/mist from the material is inhaled, remove the affected person immediately to fresh air. Get medical attention immediately. IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Do not induce vomiting without advice from poison control center. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Do not use mouth-to-mouth method if victim ingested the substance.

**17. Other Information**

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**NFPA ratings**

Health: 3  
Flammability: 0  
Instability: 0

**Disclaimer**

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