

**Safety Data Sheet**  
 acc. to OSHA HCS

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Printing date 06/14/2017  
 Reviewed on 06/14/2017  
 Version number: 5

## 1 Identification

- **Product identifier**
- **Trade name:** Zinc Chloride
- **Article number:** A6285
- **CAS Number:**  
7646-85-7
- **EC number:**  
231-592-0
- **Index number:**  
030-003-00-2
- **Application of the substance / the mixture** Laboratory chemical
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
AppliChem GmbH  
Ottoweg 4  
D-64291 Darmstadt
- **Information department:** Dept. Compliance
- **Emergency telephone number:** +49(0)6151 93570 (Inside normal business hours)

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 msds@applichem.com

## 2 Hazard(s) identification

- **Classification of the substance or mixture**  
 Met. Corr.1 H290 May be corrosive to metals.  
 Acute Tox. 4 H302 Harmful if swallowed.  
 Skin Corr. 1B H314 Causes severe skin burns and eye damage.  
 STOT SE 3 H335 May cause respiratory irritation.

- **Label elements**
- **GHS label elements**  
 The substance is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms**



GHS05 GHS07

- **Signal word** Danger
- **Hazard statements**  
 H290 May be corrosive to metals.  
 H302 Harmful if swallowed.  
 H314 Causes severe skin burns and eye damage.  
 H335 May cause respiratory irritation.
- **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.

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- **Classification system:**
- **NFPA ratings (scale 0 - 4)**



Health = 3  
Fire = 0  
Reactivity = 0

- **HMIS-ratings (scale 0 - 4)**



Health = 3  
Fire = 0  
Reactivity = 0

- **Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

### 3 Composition/information on ingredients

- **Chemical characterization: Substances**
- **CAS No. Description**  
7646-85-7 Zinc Chloride
- **Identification number(s)**
- **EC number:** 231-592-0
- **Index number:** 030-003-00-2

### 4 First-aid measures

- **Description of first aid measures**
- **After inhalation:** Supply fresh air or oxygen; call for doctor.
- **After skin contact:**  
Call a doctor immediately.  
Wash with polyethylene glycol 400 and then rinse with copious amounts of water.
- **After eye contact:**  
Rinse opened eye for several minutes under running water.  
Call a doctor immediately.
- **After swallowing:**  
make victim drink water (maximum of 2 drinking glasses)  
Do not induce vomiting; immediately call for medical help.
- **Information for doctor:**
- **Most important symptoms and effects, both acute and delayed**  
No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed**  
No further relevant information available.

### 5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**  
CO<sub>2</sub>, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Special hazards arising from the substance or mixture**  
Non-combustible.  
In case of fire, the following can be released:  
Hydrogen chloride (HCl)
- **Advice for firefighters**
- **Protective equipment:** Wear self-contained respiratory protective device.

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• **Additional information**

Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

## 6 Accidental release measures

• **Personal precautions, protective equipment and emergency procedures**

Avoid formation of dust.

Do not inhale dust.

Wear protective equipment. Keep unprotected persons away.

Avoid substance contact.

Ensure adequate ventilation

• **Environmental precautions:**

Inform respective authorities in case of seepage into water course or sewage system.

Do not allow to enter sewers/ surface or ground water.

• **Methods and material for containment and cleaning up:**

Pick up mechanically.

Avoid generation of dusts.

Use neutralizing agent.

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

Clean up affected area.

• **Reference to other sections**

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

• **Protective Action Criteria for Chemicals**

• **PAC-1:** 2 mg/m<sup>3</sup>

• **PAC-2:** 800 mg/m<sup>3</sup>

• **PAC-3:** 4,800 mg/m<sup>3</sup>

## 7 Handling and storage

• **Handling:**

• **Precautions for safe handling**

Thorough dedusting.

Any deposit of dust which cannot be avoided must be regularly removed.

• **Information about protection against explosions and fires:** No special measures required.

• **Conditions for safe storage, including any incompatibilities**

• **Storage:**

• **Requirements to be met by storerooms and receptacles:** Prevent any seepage into the ground.

• **Information about storage in one common storage facility:** Not required.

• **Further information about storage conditions:**

Keep receptacle tightly sealed.

Open receptacle only under localized extractor facilities.

Store under lock and key and with access restricted to technical experts or their assistants only.

• **Recommended storage temperature:** +15 - +25 °C

• **Specific end use(s)** No further relevant information available.

## 8 Exposure controls/personal protection

• **Additional information about design of technical systems:** No further data; see item 7.

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• **Control parameters**

• **Components with limit values that require monitoring at the workplace:**

**7646-85-7 Zinc Chloride**

PEL	Long-term value: 1 mg/m <sup>3</sup> Fume
REL	Short-term value: 2 mg/m <sup>3</sup> Long-term value: 1 mg/m <sup>3</sup>
TLV	Short-term value: 2 mg/m <sup>3</sup> Long-term value: 1 mg/m <sup>3</sup> fume

• **Additional information:** The lists that were valid during the creation were used as basis.

• **Exposure controls**

• **Personal protective equipment:**

• **General protective and hygienic measures:**

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing.

Wash hands before breaks and at the end of work.

Vacuum clean contaminated clothing. Do not blow or brush off contamination.

Avoid contact with the eyes and skin.

• **Breathing equipment:** Filter P2

• **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

• **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

• **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

• **For the permanent contact gloves made of the following materials are suitable:**

Nitrile rubber, NBR

Recommended thickness of the material:  $\geq 0.11$  mm

Value for the permeation: Level  $\geq 480$  min

• **As protection from splashes gloves made of the following materials are suitable:**

Nitrile rubber, NBR

Recommended thickness of the material:  $\geq 0.11$  mm

Value for the permeation: Level  $\geq 480$  min

• **Eye protection:**



Tightly sealed goggles

• **Body protection:**

Use protective suit.

Protective clothing should be selected specifically for the working place, depending on concentration and quantity of the hazardous substances handled.

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## 9 Physical and chemical properties

### · Information on basic physical and chemical properties

#### · General Information

#### · Appearance:

Form: Powder

Color: White

· Odor: Odorless

· Odor threshold: Not determined.

· pH-value: ~5

#### · Change in condition

Melting point/Melting range: 283-318 °C (541-604 °F)

Boiling point/Boiling range: 721-732 °C (1330-1350 °F)

· Flash point: Not applicable.

· Flammability (solid, gaseous): Product is not flammable.

#### · Ignition temperature:

Decomposition temperature: Not determined.

· Auto igniting: Not determined.

· Danger of explosion: Product does not present an explosion hazard.

#### · Explosion limits:

Lower: Not determined.

Upper: Not determined.

· Vapor pressure: Not applicable.

· Density at 20 °C (68 °F): 2.93 g/cm<sup>3</sup> (24.451 lbs/gal)

· Relative density: Not determined.

· Vapor density: Not applicable.

· Evaporation rate: Not applicable.

#### · Solubility in / Miscibility with

Water at 20 °C (68 °F): 3670-4320 g/l

· Partition coefficient (n-octanol/water): Not determined.

#### · Viscosity:

Dynamic: Not applicable.

Kinematic: Not applicable.

· Other information: No further relevant information available.

## 10 Stability and reactivity

· **Reactivity** No dangerous reactions known.

· **Chemical stability**

· **Thermal decomposition / conditions to be avoided:**

Strong heating

Moisture

· **Possibility of hazardous reactions** No dangerous reactions known.

· **Conditions to avoid** No further relevant information available.

· **Incompatible materials:**

strong acids

metals

bases

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- **Hazardous decomposition products:** In the event of fire: See chapter 5

## 11 Toxicological information

- Information on toxicological effects
- **Acute toxicity:**
- **LD/LC50 values that are relevant for classification:**

Components	Type	Value	Species
Oral LD50		329 mg/kg (mouse)	
		350 mg/kg (rat)	

- **Primary irritant effect:**
- **on the skin:** Caustic effect on skin and mucous membranes.
- **on the eye:** Strong caustic effect.
- **Additional toxicological information:**  
Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.
- **Carcinogenic categories**
- **IARC (International Agency for Research on Cancer)** Substance is not listed.
- **NTP (National Toxicology Program)** Substance is not listed.
- **OSHA-Ca (Occupational Safety & Health Administration)** Substance is not listed.

## 12 Ecological information

- **Toxicity**
- **Aquatic toxicity:**

Type of test	Effective concentration	Method	Assessment
EC50/48 h	0.33 mg/l	(daphnia magna)	

- **Persistence and degradability** No further relevant information available.
- **Behavior in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **Ecotoxicological effects:**
- **Remark:** Very toxic for fish
- **Additional ecological information:**
- **General notes:**  
Do not allow product to reach ground water, water course or sewage system, even in small quantities.  
Must not reach bodies of water or drainage ditch undiluted or unneutralized.  
Also poisonous for fish and plankton in water bodies.  
Very toxic for aquatic organisms  
Water hazard class 3 (Self-assessment): extremely hazardous for water  
Danger to drinking water if even extremely small quantities leak into the ground.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

## 13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:**  
Chemicals must be disposed of in compliance with the respective national regulations.  
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.








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- **Uncleaned packagings:**
- **Recommendation:**  
Disposal must be made according to official regulations.  
Packagings that cannot be cleansed are to be disposed of in the same manner as the product.

## 14 Transport information

· <b>UN-Number</b>	
· <b>DOT, ADR, IMDG, IATA</b>	UN2331
· <b>UN proper shipping name</b>	
· <b>DOT</b>	Zinc chloride, anhydrous
· <b>ADR</b>	Zinc chloride, anhydrous, ENVIRONMENTALLY HAZARDOUS
· <b>IMDG</b>	ZINC CHLORIDE, ANHYDROUS, MARINE POLLUTANT
· <b>IATA</b>	ZINC CHLORIDE, ANHYDROUS
· <b>Transport hazard class(es)</b>	
· <b>DOT</b>	
	 
· <b>Class</b>	8 Corrosive substances
· <b>Label</b>	8
· <b>ADR</b>	
	 
· <b>Class</b>	8 (C2) Corrosive substances
· <b>Label</b>	8
· <b>IMDG</b>	
	 
· <b>Class</b>	8 Corrosive substances
· <b>Label</b>	8
· <b>IATA</b>	
	
· <b>Class</b>	8 Corrosive substances
· <b>Label</b>	8
· <b>Packing group</b>	
· <b>DOT, ADR, IMDG, IATA</b>	III
· <b>Environmental hazards:</b>	Environmentally hazardous substance, solid; Marine Pollutant

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· <b>Marine pollutant:</b>	No Yes (DOT) Symbol (fish and tree)
· <b>Special marking (ADR):</b>	Symbol (fish and tree)
· <b>Special precautions for user</b>	Warning: Corrosive substances
· <b>Danger code (Kemler):</b>	80
· <b>EMS Number:</b>	F-A,S-B
· <b>Stowage Category</b>	A
· <b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b>	Not applicable.
· <b>Transport/Additional information:</b>	
· <b>DOT</b>	
· <b>Remarks:</b>	Special marking with the symbol (fish and tree).
· <b>ADR</b>	
· <b>Excepted quantities (EQ)</b>	Code: E1 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 1000 g
· <b>IMDG</b>	
· <b>Limited quantities (LQ)</b>	5 kg
· <b>Excepted quantities (EQ)</b>	Code: E1 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 1000 g
· <b>UN "Model Regulation":</b>	UN 2331 ZINC CHLORIDE, ANHYDROUS, 8, III, ENVIRONMENTALLY HAZARDOUS

## 15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Sara**
- **Section 355 (extremely hazardous substances):** Substance is not listed.
- **Section 313 (Specific toxic chemical listings):** Substance is listed.
- **TSCA (Toxic Substances Control Act):** Substance is listed.
- **Proposition 65**
- **Chemicals known to cause cancer:** Substance is not listed.
- **Chemicals known to cause reproductive toxicity for females:** Substance is not listed.
- **Chemicals known to cause reproductive toxicity for males:** Substance is not listed.
- **Chemicals known to cause developmental toxicity:** Substance is not listed.
- **Carcinogenity categories**
- **EPA (Environmental Protection Agency) D, I, II**
- **TLV (Threshold Limit Value established by ACGIH)** Substance is not listed.
- **NIOSH-Ca (National Institute for Occupational Safety and Health)** Substance is not listed.
- **GHS label elements**  
The substance is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms**



GHS05 GHS07

- **Signal word** Danger
- **Hazard statements**  
H290 May be corrosive to metals.

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**Trade name: Zinc Chloride**

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H302 Harmful if swallowed.

H314 Causes severe skin burns and eye damage.

H335 May cause respiratory irritation.

• **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.

• **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

## 16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

• **Department issuing SDS:** Dept. Compliance

• **Contact:** Mr. Th. Stöckle

• **Date of preparation / last revision** 06/14/2017 / 4

• **Abbreviations and acronyms:**

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

ICAO: International Civil Aviation Organisation

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

Met. Corr. 1: Corrosive to metals – Category 1

Acute Tox. 4: Acute toxicity – Category 4

Skin Corr. 1B: Skin corrosion/irritation – Category 1B

STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

• **\* Data compared to the previous version altered.**

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