



SAFETY DATA SHEET

99.6%

ZINC CHLORIDE

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. PRODUCT IDENTIFIER

Product name: Zinc Chloride
Product No.: ZCH
CAS-No.: 7646-85-7
EC No.: 231-592-0
REACH: 01-2119472431-44
Synonym: Zinc butter, Zinc dichloride
Chemical Formula: ZnCl_2

1.2. RELEVANT IDENTIFIED USES OF THE SUBSTANCE OR MIXTURE AND USES ADVISED AGAINST

Recommended use: In textile processing, metallurgical fluxes, and chemical synthesis;
As an electrolyte in dry cell batteries;
As a condensing agent, dehydrating agent, wood preservative, deodorant and disinfectant.

1.3. DETAILS OF THE SUPPLIER OF THE SAFETY DATA SHEET

HD Chemicals LTD
UNIT 9 Scott Business Park
PL2 2PB Plymouth UK

Contact Person responsible for SDS: Mr Peter Konefal, e-mail: contact@hdchemicals.co.uk

SECTION 2: HAZARDS IDENTIFICATION

2.1. CLASSIFICATION OF THE SUBSTANCE OR MIXTURE

Classification 67/548/EEC: Xn; R22
C; R35
N; R50/53
Classification – EC 1272/2008: Acute toxicity, oral; Category 4 (H302)

Skin corrosion/irritation; Category 1B (H314)

Serious eye damage/eye irritation; Category 1 (H318)

Specific target organ toxicity, single exposure; Respiratory tract irritation; Category 3 (H335)

Hazardous to the aquatic environment, long-term hazard; Category 1 (H410)

2.2. LABEL ELEMENTS



SIGNAL WORDS

Danger

RISK PHRASES

R22	Harmful if swallowed
R35	Causes severe burns
R50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

HAZARD PHRASES

H302	Harmful if swallowed
H314	Causes severe skin burns and eye damage
H318	Causes serious eye damage
H335	May cause respiratory irritation
H410	Very toxic to aquatic life with long-lasting effects

PROTECTION PHRASES

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
P302+P352	IF ON SKIN: Wash with plenty of water



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P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

P310 Immediately call a doctor/ physician

SAFETY PHRASES

S1/2 Keep locked up and out of the reach of children

S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice

S36/37/39 Wear suitable protective clothing, gloves and eye/face protection

S45 In case of accident or if you feel unwell seek medical advice immediately (show the label where possible)

S60 This material and its container must be disposed of as hazardous waste

S61 Avoid release to the environment. Refer to special instructions/safety data sheet

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

67/548/EEC/1999/45/EC

Composition information – main constituents

Substance name	Mol. Formula	REACH	EINECS No.	CAS-No.	Classification
Zinc Chloride	ZnCl ₂	01-2119472431-44	231-592-0	7646-85-7	R22, R35, R50/53

EC 1272/2008

Composition information – main constituents

Substance name	Mol. Formula	REACH	EINECS No.	CAS-No.	Classification
Zinc Chloride	ZnCl ₂	01-2119472431-44	231-592-0	7646-85-7	H302, H314, H318, H335, H410

SECTION 4: FIRST AID MEASURES**4.1. DESCRIPTION OF FIRST AID MEASURES**



- First-aid measures general:** Consult a physician when you feel unwell. Show this safety data sheet to the doctor in attendance.
- Inhalation:** If exposed to excessive levels, remove to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
- Ingestion:** Never give anything by mouth to an unconscious person. Rinse mouth with water. Drink plenty of water. Do not induce vomiting. Immediate medical attention is required.
- Skin contact:** Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Call a physician.
- Eye contact:** Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention if irritation persists.

4.2. MOST IMPORTANT SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED

- Inhalation:** Causes respiratory tract irritation. Coughing and shortness of breath.
- Ingestion:** Causes gastrointestinal tract irritation with nausea, vomiting, diarrhoea and dyspnoea. Causes circulatory collapse.
- Skin contact:** Causes severe burns, causes poorly healing wounds.
- Eye contact:** Causes serious eye damage, risk of blindness.

4.3. INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED

Treat symptomatically.

SECTION 5: FIREFIGHTING MEASURES

5.1. EXTINGUISHING MEDIA

- Suitable extinguishing media:** Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Adjust extinguishing media to the surrounding fire. Use dry powder, carbon dioxide, water spray, sand or alcohol-resistant foam.
- Unsuitable extinguishing media:** Do not use a heavy water stream.

5.2. SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE

The product is non-combustible but in case of fire may be liberated: zinc oxides (ZnO), hydrogen chloride gas (HCl), carbon monoxide (CO), carbon dioxide (CO₂).

5.3. ADVICE FOR FIRE-FIGHTERS



Fight fire with normal precautions from a reasonable distance. Wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapours.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES

Wear suitable protective equipment (splash goggles, protective suit, boots, gloves and self-contained breathing apparatus) to prevent any contamination of skin, eyes and personal clothing. Ensure adequate ventilation of the working area. Avoid contact with skin and eyes. Avoid breathing vapours, mist or gas. Avoid formation of dust. Keep unprotected persons away. Evacuate personnel to a safe area.

For personal protection see section 8.1.

6.2. ENVIRONMENTAL PRECAUTIONS

Avoid release to the environment. Do not allow to enter sewers/ surface or ground water. Do not allow to enter into soil/subsoil. Prevent further leakage or spillage if safe to do so. Use appropriate container to avoid environmental contamination. Local authorities should be advised if significant spillages cannot be contained.

6.3. METHODS AND MATERIAL FOR CONTAINMENT AND CLEANING UP

Sweep up or vacuum up spillage and collect in suitable container for disposal. Clean contaminated floor. Avoid dust formation.

SECTION 7: HANDLING AND STORAGE

7.1. PRECAUTIONS FOR SAFE HANDLING

Handle in accordance with good industrial hygiene and safety practice. Use only under a chemical fume hood. Avoid formation of dust. Do not inhale dust/smoke/mist. Ensure adequate ventilation of the working area. Wear personal protective equipment. Avoid contact with eyes and skin. Do not eat or drink during the process, washing hands afterwards with suitable cleaning products. Remove contaminated clothing and shoes. Wash clothing before re-using. Avoid the formation or spread of mists in the air.

7.2. CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES

Keep in a cool, dry, well ventilated area. Keep in original tightly closed containers. Keep away from food and drink. Keep away from moisture, heat and other sources of ignition or open flame. Avoid incompatibles products: oxidizing agents, acids, bases, metals. Avoid dust generation.

7.3. SPECIFIC END USE(S)

See section 1.2.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. CONTROL PARAMETERS/EXPOSURE GUIDELINES

Occupational Exposure Limit Values (Zinc Chloride):

CAS NO	Exposure limit	Value	Name of Agent
7646-85-7	TWA – 8 Hrs	1 mg/m ³	fumes
7646-85-7	STEL – 15 Min	2 mg/m ³	fumes

Engineering controls:

Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. Ensure that eyewash stations and safety showers are close to the workstation location. Wash hands before breaks and at the end of the working day.



EYE PROTECTION



FACE SHIELD



RESPIRATOR



PROTECTION WEAR



HAND PROTECTION

Protective equipment:

Use protective tightly fitting safety goggles (European standard - EN 166), face shield, gloves (European standard - EN 374) and long sleeved clothing to prevent skin, body and eyes exposure.

Respiratory equipment:

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. To protect the wearer,



respiratory protective equipment must be the correct fit and be used and maintained properly. Large scale: Use a NIOSH/MSHA or European Standard EN 136 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced: full face mask (DIN EN 136). Recommended Filter type: Particulates filter conforming to EN 143; Type P; White.

Skin and body protection: Wear appropriate protective gloves and clothing to prevent skin exposure. Wear impervious protective clothing; including long sleeved shirt and pants, boots, lab coat, apron or coveralls, as appropriate, to minimize skin contact. Wear appropriate protective work gloves when handling material to prevent skin contact. The glove material has to be impermeable and resistant to the product. Protective gloves should be replaced at first signs of wear. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact. Wash and dry hands.

Eye/Face protection: Safety glasses with side shields or goggles.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Solid
Colour:	White
Odour:	Odourless
Initial boiling point (°C):	No data available
Melting point (°C):	293 °C
Freezing point:	No data available
Relative density:	1.907 g/cm ³
Specific gravity / density:	Not available
Vapour density:	Not available
Vapour pressure:	Not available
Flash point (°C):	Not available
Molecular mass:	136.28 g/mol
Auto-ignition temperature:	Not applicable
Oxidizing properties:	Not available
Decomposition temperature:	Not available
Molecular formula:	ZnCl ₂

SECTION 10: STABILITY AND REACTIVITY

10.1. REACTIVITY

Zinc Chloride is stable under normal conditions of use, storage and transport.

10.2. CHEMICAL STABILITY

This product is stable under normal conditions and under recommended usage and storage.

10.3. POSSIBILITY OF HAZARDOUS REACTIONS

When heated can decompose. May liberate toxic gases.

10.4. CONDITIONS TO AVOID

Keep away from food and drink. Keep away from moisture, heat and other sources of ignition or open flame. Avoid incompatibles products: oxidizing agents, acids, bases, metals. Avoid dust generation.

10.5. INCOMPATIBLE MATERIALS

May liberate toxic gases. Keep away from incompatibles materials such as strong bases, strong acids, strong oxidizing agents, cyanides and sulfides.

10.6. HAZARDOUS DECOMPOSITION

The product is non-combustible but in case of fire may be liberated: zinc oxides (ZnO), hydrogen chloride gas (HCl), carbon monoxide (CO), carbon dioxide (CO₂).

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. INFORMATION ON TOXICOLOGICAL EFFECTS

TOXIC DOSE

LD50 Oral – Rat – 350 mg/kg

LC50 Inhalation – Rat ≤ 1975 mg/m³ (10min)

Inhalation:

Causes respiratory tract irritation. Coughing and shortness of breath.

Ingestion:

Causes gastrointestinal tract irritation with nausea, vomiting, diarrhoea and dyspnoea. Causes circulatory collapse.

Skin contact:

Causes severe burns, causes poorly healing wounds.



Eye contact: Causes serious eye damage, risk of blindness.

SECTION 12: ECOLOGICAL INFORMATION

12.1. TOXICITY

Aquatic Toxicity:

Toxicity to freshwater fish: LC50: 0.4 - 2.2 mg/l, 96h (Cyprinus carpio)

Toxicity to water flea: EC50: 0.2 mg/l, 48h (Daphnia magna)

Toxicity to algae: EC50: 0.027-0.105 mg/l, 72h

12.2. PERSISTENCE AND DEGRADABILITY

Not relevant for inorganic substances.

12.3. BIOACCUMULATIVE POTENTIAL

Bioaccumulation is unlikely.

12.4. MOBILITY

The product is water soluble, and may spread in water systems Will likely be mobile in the environment due to its water solubility. Highly mobile in soils.

12.5. RESULTS OF PBT AND vPvB ASSESSMENT

No data available.

12.6. OTHER ADVERSE EFFECTS

Avoid release to the environment.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste disposal recommendations: Disposal of zinc chloride should be in accordance with local and national legislation. Processing, use or contamination of this product may change the waste management options. Should not be released into the environment. Do not discharge into waterways or sewer systems. Do not re-use empty containers. Dispose of container and unused contents in accordance with applicable member state and local requirements. This material and its container must be disposed of as hazardous waste.

Uncleaned packaging: Disposal must be made according to official regulations.

**SECTION 14: TRANSPORT INFORMATION****IMDG**

UN number	2331
UN proper shipping name	Zinc chloride, anhydrous
Transport hazard class(es)	8
Packing group	III

ADR/RID

UN number	2331
UN proper shipping name	Zinc chloride, anhydrous
Transport hazard class(es)	8
Packing group	III

IATA

UN number	2331
UN proper shipping name	Zinc chloride, anhydrous
Transport hazard class(es)	8
Packing group	III

SECTION 15: REGULATORY INFORMATION**15.1. SAFETY, HEALTH AND ENVIRONMENTAL REGULATIONS/LEGISLATION SPECIFIC FOR THE SUBSTANCE OR MIXTURE**

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (as amended).

Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures (as amended).

15.2 CHEMICAL SAFETY ASSESSMENT

No Chemical Safety Assessment has been carried out for this substance.

SECTION 16: OTHER INFORMATION**General information**



The information contained in this safety data sheet is provided in accordance with the requirements of the regulations. The product should not be used for purposes other than those shown in section 1 without first referring to the supplier and obtaining written handling instruction. As the specific conditions of use of the product are outside the suppliers control, the user is responsible for ensuring that the requirements of relevant legislation are complied with.

Revision Comments

This information is provided in a revised format to that previously produced.

Revision Date: 01/10/2018

Revision: 01

Safety Data Sheet Status Approved.

Date printed 01/10/2018

Signature Initials P.K.

DISCLAIMER:

If this product is re-distributed and re-formulated for sale, details of its hazards and recommended methods for safe handling must be passed to customers. Customers are urged to ensure that the product is entirely suitable for their own purpose. It is the customer's responsibility to ensure that a suitable and sufficient assessment of the risks created by a work activity using this product is undertaken before this product is used.

NOTE:

The information contained in this Safety Data Sheet does not constitute the users own assessment of workplace risk as required by other Health & Safety Legislation (e.g. the Health and Safety at Work Act, 1974; the Control of Substances Hazardous to Health Regulations, 1988). The data given here is based on current knowledge and experience. The purpose of this data sheet is to describe the products in terms of their safety requirements. The data does not signify any warranty with regard to the product's properties.