Safety data sheet
according to UK REACH (SI 2020/1577) as amended

Printing date 01.04.2025 Version number 2 Revision: 01.04.2025

* SECTION 1: Identification of the substance/mixture and of the company/undertaking

· **1.1 Product identifier**

· **Trade name: Zinc Chloride Crystals Laboratory Grade**

· **Product Code:** 50-1900-50
· **CAS Number:**
7646-85-7
· **EC number:**
231-592-0
· **Index number:**
030-003-00-2
· **1.2 Relevant identified uses of the substance or mixture and uses advised against**
· **Product category** PC21 Laboratory chemicals
· **Application of the substance / the mixture** Laboratory chemicals
· **Uses advised against**
Any use carrying a risk of direct contact with eyes/skin where workers are exposed without adequate personal protective equipment (PPE).
Any use involving aerosol formation or vapour release in excess of the assigned Workplace Exposure Limit where workers are exposed without suitable Respiratory Protective Equipment.
The product is stictly intended for industrial or professional use only.

· **1.3 Details of the supplier of the safety data sheet**
· **Supplier:**
Severn Biotech Ltd.
Unit 2,
Park Lane,
Kidderminster,
Worcestershire.
DY11 6TJ
UK
Tel: 0044 1562 825286
Fax: 0044 1562 825284
email: info@severnbiotech.com

· **Further information obtainable from:** Product safety department.
· **1.4 Emergency telephone number:**
Members of the public seeking specific information on poisons should contact:
In England and Wales: NHS 111 - dial 111
In Scotland: NHS 24 - dial 111

* SECTION 2: Hazards identification

· **2.1 Classification of the substance or mixture**
· **Classification according to GB-CLP**

Acute Tox. 4	H302 Harmful if swallowed.
Skin Corr. 1B	H314 Causes severe skin burns and eye damage.
Aquatic Acute 1	H400 Very toxic to aquatic life.
Aquatic Chronic 1	H410 Very toxic to aquatic life with long lasting effects.

· **2.2 Label elements**
· **Labelling according to GB-CLP** The substance is classified and labelled according to the GB CLP regulation.

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· **Hazard pictograms**

GHS05 GHS07 GHS09

· **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**
P260 Do not breathe dusts or mists.
P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
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 POISON CENTER/doctor.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local regulations.
· **2.3 Other hazards**
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.

*
SECTION 3: Composition/information on ingredients

· **3.1 Substances**
· **CAS No. Description**
CAS: 7646-85-7 Zinc chloride
· **Identification number(s)**
· **EC number:** 231-592-0
· **Index number:** 030-003-00-2
· **Additional information:**
CAS 7646-85-7: Anhydrous
CAS 29426-92-4: Tetrahydrate

*
SECTION 4: First aid measures

· **4.1 Description of first aid measures**
· **General information:**
Immediately remove any clothing soiled by the product.
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
· **After inhalation:** Supply fresh air; consult doctor in case of complaints.
· **After skin contact:**
Immediately wash with water and soap and rinse thoroughly.
If skin irritation continues, consult a doctor.
Chemical burns must be treated promptly by a physician.

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· **After eye contact:**
Check for and remove any contact lenses.
Rinse opened eye for several minutes under running water. Then consult a doctor.
· **After swallowing:**
Rinse out mouth and then drink plenty of water.
Do not induce vomiting; call for medical help immediately.
· **Information for doctor:**
Treat symptomatically and supportively.
Refer to section 11.
· **4.2 Most important symptoms and effects, both acute and delayed** No further relevant information available.
· **4.3 Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

*
SECTION 5: Firefighting measures

· **5.1 Extinguishing media**
· **Suitable extinguishing agents:**
CO2, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
Use fire extinguishing methods suitable to surrounding conditions.
· **For safety reasons unsuitable extinguishing agents:** Water with full jet
· **5.2 Special hazards arising from the substance or mixture**
May react with metals, releasing hydrogen.
In case of fire, the following can be released:
Hydrogen chloride (HCl)
· **5.3 Advice for firefighters**
· **Protective equipment:**
Wear self-contained respiratory protective device.
Wear fully protective suit.
Do not inhale explosion gases or combustion gases.
· **Additional information** Collect contaminated fire fighting water separately. It must not enter the sewage system.

SECTION 6: Accidental release measures

· **6.1 Personal precautions, protective equipment and emergency procedures**
Ensure adequate ventilation
Avoid formation of dust.
Wear protective equipment. Keep unprotected persons away.
· **6.2 Environmental precautions:**
Do not allow to penetrate the ground/soil.
Do not allow product to reach sewage system or any water course in the undiluted form.
· **6.3 Methods and material for containment and cleaning up:**
Pick up mechanically.
Send for recovery or disposal in suitable receptacles.
Ensure adequate ventilation.
· **6.4 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.

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* SECTION 7: Handling and storage

· **7.1 Precautions for safe handling**
Prevent formation of dust.
Ensure good ventilation/exhaustion at the workplace.
Avoid direct contact (skin/eye contact, ingestion and/or inhalation of fume/mist/dust) with the product in the undiluted form.
Safety showers and eye wash facilities should be available at the work area.
· **Information about fire - and explosion protection:** No special measures required.

· **7.2 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:**
Store away from foodstuffs.
Store away from metals.
· **Further information about storage conditions:**
Keep container tightly sealed.
Store in a bunded area.
Store in cool, dry conditions in well sealed receptacles.
Protect from humidity and water.
· **Storage class:** 8 B
· **7.3 Specific end use(s)** No further relevant information available.

* SECTION 8: Exposure controls/personal protection

· **8.1 Control parameters**

· **Ingredients with limit values that require monitoring at the workplace:**	
CAS: 7646-85-7 Zinc chloride	
WEL	Short-term value: 2 mg/m³ Long-term value: 1 mg/m³

· **PNECs**	
Freshwater	14.4 – 30 µg/L
Marine water	7.2 – 15 µg/L
Sewage Treatment Plant	100 – 208.4 µg/L
Sediment (freshwater)	146.9 – 306.2 mg/kg
Sediment (marine water)	162.2 – 338.1 µg/kg
Soil	83.1 – 173.2 mg/kg

· **Additional information:** The lists valid during the making were used as basis.

· **8.2 Exposure controls**
· **Appropriate engineering controls** No further data; see section 7.
· **Individual protection measures, such as personal protective equipment**
· **General protective and hygienic measures:**
Do not eat, drink, smoke or sniff while working.
Do not breathe dust
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing
Wash hands before breaks and at the end of work.

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Avoid contact with the eyes and skin.
Storing food in the working area is prohibited.
Take note of assigned Workplace Exposure Limits.
Ensure that eyewash stations and safety showers are close to the workstation location.

· **Respiratory protection:**
Use suitable respiratory protective device in case of insufficient ventilation.
Filter P2

· **Hand protection**

Protective gloves.
Use gloves tested and approved under appropriate government standards such as NIOSH (US) or EN374 (EU).

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.

· **Eye/face protection**

Tightly sealed goggles conforming to EN166.

· **Body protection:**

Protective work clothing

Body protection must be chosen depending on product properties, activity and possible exposure.

· **Environmental exposure controls** Do not allow to enter drains, sewers or watercourses.
· **Risk management measures** The operators shall be instructed adequately.

*
SECTION 9: Physical and chemical properties

· **9.1 Information on basic physical and chemical properties**	
· **General Information**	
· **Physical state**	Solid
· **Colour:**	White
· **Odour:**	Mild
· **Odour threshold:**	Not determined.
· **Melting point/freezing point:**	Undetermined.
· **Boiling point or initial boiling point and boiling range**	Undetermined.
· **Flammability**	Product is not flammable.
· **Lower and upper explosion limit**	
· **Lower:**	Not determined.
· **Upper:**	Not determined.
· **Flash point:**	Not applicable.
· **Decomposition temperature:**	287 °C

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· **pH**	4 – 6 (10%)
· **Viscosity:**	
· **Kinematic viscosity**	Not applicable.
· **Dynamic:**	Not applicable.
· **Solubility**	
· **water:**	Easily soluble.
· **Partition coefficient n-octanol/water (log value)**	Not determined.
· **Vapour pressure:**	Not applicable.
· **Density and/or relative density**	
· **Density at 20 °C:**	2.93 g/cm³
· **Relative density**	Not determined.
· **Vapour density**	Not applicable.
· **9.2 Other information**	NOTE: The physical data presented above are typical values and should not be construed as a specification.
· **Appearance:**	
· **Form:**	Powder
· **Important information on protection of health and environment, and on safety.**	
· **Ignition temperature:**	Not determined.
· **Explosive properties:**	Product does not present an explosion hazard.
· **Molecular weight**	136.28 g/mol
· **Change in condition**	
· **Evaporation rate**	Not applicable.
· **Information with regard to physical hazard classes**	
· **Explosives**	Not applicable
· **Flammable gases**	Not applicable
· **Aerosols**	Not applicable
· **Oxidising gases**	Not applicable
· **Gases under pressure**	Not applicable
· **Flammable liquids**	Not applicable
· **Flammable solids**	Not applicable
· **Self-reactive substances and mixtures**	Not applicable
· **Pyrophoric liquids**	Not applicable
· **Pyrophoric solids**	Not applicable
· **Self-heating substances and mixtures**	Not applicable
· **Substances and mixtures, which emit flammable gases in contact with water**	Not applicable
· **Oxidising liquids**	Not applicable
· **Oxidising solids**	Not applicable
· **Organic peroxides**	Not applicable
· **Corrosive to metals**	Not applicable
· **Desensitised explosives**	Not applicable

*
SECTION 10: Stability and reactivity

· **10.1 Reactivity** No further relevant information available.
· **10.2 Chemical stability**
· **Thermal decomposition / conditions to be avoided:**
No decomposition if used and stored according to specifications.
· **10.3 Possibility of hazardous reactions** Reacts with alkaline metals.

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· **10.4 Conditions to avoid** No further relevant information available.
· **10.5 Incompatible materials:**
Strong bases.
Finely powdered metals.
Cyanides
Sulphides
· **10.6 Hazardous decomposition products:**
Hydrogen chloride (HCl)
Metal oxide

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SECTION 11: Toxicological information

· **11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008**
· **Acute toxicity**
Harmful if swallowed.

· **LD/LC50 values relevant for classification:**		
Oral	LD50	1,260 mg/kg (mouse)
Dermal	LD50	> 2,000 mg/kg (rabbit)

· **Primary irritant effect:**
· **Skin corrosion/irritation**
Causes severe skin burns and eye damage.
· **Serious eye damage/irritation**
Causes severe skin burns and eye damage.
· **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.
· **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
· **Carcinogenicity** Based on available data, the classification criteria are not met.
· **Reproductive toxicity** Based on available data, the classification criteria are not met.
· **STOT-single exposure** Based on available data, the classification criteria are not met.
· **STOT-repeated exposure** Based on available data, the classification criteria are not met.
· **Aspiration hazard** Based on available data, the classification criteria are not met.
· **Additional toxicological information:**
ROUTES OF EXPOSURE: Can be absorbed into the body by inhalation and by ingestion.
Inhalation may cause lung oedema, but only after initial corrosive effects on eyes and/or airways have become manifest. The symptoms of lung oedema often do not become manifest until a few hours have passed and they are aggravated by physical effort. Rest and medical observation are therefore essential. Immediate administration of an appropriate inhalation therapy by a doctor or a person authorized by him/her, should be considered.
INHALATION RISK: A harmful concentration of airborne particles can be reached quickly especially if powdered.
Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of oesophagus and stomach.
· **11.2 Information on other hazards**
· **Endocrine disrupting properties** Substance is not listed.

*
SECTION 12: Ecological information

· **12.1 Toxicity**
· **Aquatic toxicity:** No further relevant information available.
· **12.2 Persistence and degradability** Inorganic substance: not applicable
· **12.3 Bioaccumulative potential** Product is not expected to bioaccumulate.
· **12.4 Mobility in soil** No further relevant information available.

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· **12.5 Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.
· **12.6 Endocrine disrupting properties** The product does not contain substances with endocrine disrupting properties.
· **12.7 Other adverse effects**
· **Remark:** Very toxic for fish
· **Additional ecological information:**
· **General notes:**
Very toxic for aquatic organisms
Also poisonous for fish and plankton in water bodies.
Must not reach sewage water or drainage ditch undiluted or unneutralised.
Water hazard class 3 (German Regulation) (Assessment by list): extremely hazardous for water
Do not allow product to reach ground water, water course or sewage system, even in small quantities.
Danger to drinking water if even extremely small quantities leak into the ground.

*
SECTION 13: Disposal considerations

· **13.1 Waste treatment methods**
· **Recommendation**
Recommended Hierarchy of Controls:
- Minimise waste;
- Reuse if not contaminated;
- Recycle, if possible; or
- Safe disposal (if all else fails).
Must not be disposed together with household garbage. Do not allow product to reach sewage system.
Contact waste processors for recycling information.
Used, degraded or contaminated product may be classified as hazardous waste. Anyone classifying hazardous waste and determining its fate must be qualified in accordance with state and international legislation.

· **Uncleaned packaging:**
· **Recommendation:**
Empty contaminated packagings thoroughly. They may be recycled after thorough and proper cleaning.
Disposal must be made according to official regulations.
Container remains hazardous when empty. Continue to observe all precautions.
Containers, even those that are “empty,” may contain residues that can develop hazardous gases and vapours upon heating. Do not cut, drill, grind, weld, or perform similar operations on or near empty containers.
· **Recommended cleansing agents:** Large quantities of water

*
SECTION 14: Transport information

· **14.1 UN number or ID number**	
· **ADR/RID/ADN, IMDG, IATA**	UN2331
· **14.2 UN proper shipping name**	
· **ADR/RID/ADN**	UN2331 ZINC CHLORIDE, ANHYDROUS, ENVIRONMENTALLY HAZARDOUS
· **IMDG**	ZINC CHLORIDE, ANHYDROUS, MARINE POLLUTANT
· **IATA**	ZINC CHLORIDE, ANHYDROUS

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· **14.3 Transport hazard class(es)**

· **ADR/RID/ADN**

· **Class**	8 (C2) Corrosive substances.
· **Label**	8

· **IMDG**

· **Class**	8 Corrosive substances.
· **Label**	8

· **IATA**

· **Class**	8 Corrosive substances.
· **Label**	8

· **14.4 Packing group**	
· **ADR/RID/ADN, IMDG, IATA**	III
· **14.5 Environmental hazards:**	Environmentally hazardous substance, solid; Marine Pollutant
· **Marine pollutant:**	Symbol (fish and tree)
· **Special marking (ADR/RID/ADN):**	Symbol (fish and tree)
· **14.6 Special precautions for user**	Warning: Corrosive substances.
· **Hazard identification number (Kemler code):**	80
· **Hazchem Code:**	2X
· **EMS Number:**	F-A,S-B
· **Segregation groups**	(SGG1) Acids, (SGG7) heavy metals and their salts (including their organometallic compounds)
· **Stowage Category**	A
· **14.7 Maritime transport in bulk according to IMO instruments**	Not applicable.
· **Transport/Additional information:**	Amounts up to 5kg or 5L per single or inner package do not require the Environmentally Hazardous mark in accordance with ADR 5.2.1.8.1 and IMDG 2.10.2.7.
· **ADR/RID/ADN**	
· **Limited quantities (LQ)**	5 kg
· **Excepted quantities (EQ)**	Code: E1 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 1000 g
· **Transport category**	3

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· **Tunnel restriction code**	E
· **IMDG**	
· **Limited quantities (LQ)**	5 kg
· **Excepted quantities (EQ)**	Code: E1 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 1000 g
· **UN "Model Regulation":**	UN 2331 ZINC CHLORIDE, ANHYDROUS, 8, III, ENVIRONMENTALLY HAZARDOUS

*
SECTION 15: Regulatory information

· **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
· **Poisons Act**
· **Regulated explosives precursors** Substance is not listed.
· **Regulated poisons** Substance is not listed.
· **Reportable explosives precursors** Substance is not listed.
· **Reportable poisons** Substance is not listed.

· **Control Of Major Accident Hazards Regulations 2015 (COMAH)**
· **Named dangerous substances - ANNEX I** Substance is not listed.
· **COMAH category** E1
· **Qualifying quantity (tonnes) for the application of lower-tier requirements** 100 t
· **Qualifying quantity (tonnes) for the application of upper-tier requirements** 200 t
· **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

*
SECTION 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.
This Safety Data Sheet is in compliance with Regulation (EC) No 1907/2006, Article 31 as amended by Regulation (EU) 2020/878.

· **Training hints**
This product should only be handled by workers who have received sufficient training in the safe handling and use of chemical products.

· **Department issuing SDS:** Product safety department.
· **Abbreviations and acronyms:**
ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
GHS: Globally Harmonised System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
PNEC: Predicted No-Effect Concentration (UK REACH)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
Acute Tox. 4: Acute toxicity – Category 4
Skin Corr. 1B: Skin corrosion/irritation – Category 1B
Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1
Aquatic Chronic 1: Hazardous to the aquatic environment - long-term aquatic hazard – Category 1
· *** Data compared to the previous version altered.**