

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Version 7.9

Revision Date 18.12.2024

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GENERIC EU MSDS - NO COUNTRY SPECIFIC DATA - NO OEL DATA

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

### 1.1 Product identifiers

Product name : Zinc chloride

Product Number : 31650

Brand : SIGALD

Index-No. : 030-003-00-2

REACH No. : 01-2119472431-44-XXXX

CAS-No. : 7646-85-7

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Manufacture of substances

### 1.3

CHEMIKART

### 1.4 Emergency telephone

Emergency Phone # : 000 800 1007 141 (CHEMTREC)

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

|                                                                                    |                                                |
|------------------------------------------------------------------------------------|------------------------------------------------|
| Acute toxicity, (Category 4)                                                       | H302: Harmful if swallowed.                    |
| Skin corrosion, (Sub-category 1B)                                                  | H314: Causes severe skin burns and eye damage. |
| Serious eye damage, (Category 1)                                                   | H318: Causes serious eye damage.               |
| Specific target organ toxicity - single exposure, (Category 3), Respiratory system | H335: May cause respiratory irritation.        |
| Short-term (acute) aquatic                                                         | H400: Very toxic to aquatic life.              |

hazard, (Category 1)

Long-term (chronic) aquatic  
hazard, (Category 1)

H410: Very toxic to aquatic life with long  
lasting effects.

## 2.2 Label elements

### Labelling according Regulation (EC) No 1272/2008

Pictogram

|                                |                                                                                                                                  |
|--------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| Signal Word                    | Danger                                                                                                                           |
| Hazard Statements              |                                                                                                                                  |
| H302                           | Harmful if swallowed.                                                                                                            |
| H314                           | Causes severe skin burns and eye damage.                                                                                         |
| H335                           | May cause respiratory irritation.                                                                                                |
| H410                           | Very toxic to aquatic life with long lasting effects.                                                                            |
| Precautionary Statements       |                                                                                                                                  |
| P260                           | Do not breathe dust.                                                                                                             |
| P273                           | Avoid release to the environment.                                                                                                |
| P280                           | Wear protective gloves/ protective clothing/ eye protection/ face protection.                                                    |
| P301 + P312                    | IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell.                                                                   |
| P303 + P361 + P353             | IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.                                     |
| P305 + P351 + P338             | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| Supplemental Hazard Statements | none                                                                                                                             |

### Reduced Labeling (<= 125 ml)

Pictogram

|                                |                                                                                                                                  |
|--------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| Signal Word                    | Danger                                                                                                                           |
| Hazard Statements              |                                                                                                                                  |
| H314                           | Causes severe skin burns and eye damage.                                                                                         |
| Precautionary Statements       |                                                                                                                                  |
| P260                           | Do not breathe dust.                                                                                                             |
| P280                           | Wear protective gloves/ protective clothing/ eye protection/ face protection.                                                    |
| P303 + P361 + P353             | IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.                                     |
| P305 + P351 + P338             | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| Supplemental Hazard Statements | none                                                                                                                             |

### 2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Ecological information:

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Toxicological information:

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

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## SECTION 3: Composition/information on ingredients

### 3.1 Substances

Formula :  $\text{Cl}_2\text{Zn}$   
Molecular weight : 136,30 g/mol  
CAS-No. : 7646-85-7  
EC-No. : 231-592-0  
Index-No. : 030-003-00-2

| Component            |              | Classification                                                                                                                                                                                                                       | Concentration |
|----------------------|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| <b>zinc chloride</b> |              |                                                                                                                                                                                                                                      |               |
| CAS-No.              | 7646-85-7    | Acute Tox. 4; Skin Corr. 1B; Eye Dam. 1; STOT SE 3; Aquatic Acute 1; Aquatic Chronic 1; H302, H314, H318, H335, H400, H410<br>Concentration limits:<br>>= 5 %: STOT SE 3, H335;<br>M-Factor - Aquatic Acute: 10 - Aquatic Chronic: 1 | <= 100 %      |
| EC-No.               | 231-592-0    |                                                                                                                                                                                                                                      |               |
| Index-No.            | 030-003-00-2 |                                                                                                                                                                                                                                      |               |

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

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## SECTION 4: First aid measures

### 4.1 Description of first-aid measures

#### General advice

First aiders need to protect themselves. Show this material safety data sheet to the doctor in attendance.

#### If inhaled

After inhalation: fresh air. Call in physician.

#### In case of skin contact

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

**In case of eye contact**

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

**If swallowed**

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

**4.2 Most important symptoms and effects, both acute and delayed**

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

**4.3 Indication of any immediate medical attention and special treatment needed**

No data available

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**SECTION 5: Firefighting measures****5.1 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.

**5.2 Special hazards arising from the substance or mixture**

Hydrogen chloride gas  
Zinc/zinc oxides  
Not combustible.  
Ambient fire may liberate hazardous vapours.

**5.3 Advice for firefighters**

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

**5.4 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.

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**SECTION 6: Accidental release measures****6.1 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.  
For personal protection see section 8.

**6.2 Environmental precautions**

Do not let product enter drains.

**6.3 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.

**6.4 Reference to other sections**

For disposal see section 13.

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## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

For precautions see section 2.2.

### 7.2 Conditions for safe storage, including any incompatibilities

#### Storage conditions

Handle under nitrogen, protect from moisture. Store under nitrogen.  
Tightly closed. Dry.

strongly hygroscopic

#### Storage class

Storage class (TRGS 510): 8A: Combustible, corrosive hazardous materials

### 7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

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## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

#### Ingredients with workplace control parameters

#### Predicted No Effect Concentration (PNEC)

| Compartment            | Value       |
|------------------------|-------------|
| Fresh water            | 20,6 µg/l   |
| Remarks                | Zinc        |
| Fresh water sediment   | 117,8 mg/kg |
|                        | Zinc        |
| Sea water              | 6,1 µg/l    |
|                        | Zinc        |
| Sea sediment           | 56,5 mg/kg  |
|                        | Zinc        |
| Sewage treatment plant | 52 µg/l     |
|                        | Zinc        |
| Soil                   | 35,6 mg/kg  |
|                        | Zinc        |

### 8.2 Exposure controls

#### Personal protective equipment

##### Eye/face protection

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Tightly fitting safety goggles

##### Skin protection

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN 16523-1 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

Full contact

Material: Nitrile rubber  
Minimum layer thickness: 0,11 mm  
Break through time: 480 min  
Material tested:KCL 741 Dermatril® L

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN 16523-1 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

Splash contact

Material: Nitrile rubber  
Minimum layer thickness: 0,11 mm  
Break through time: 480 min  
Material tested:KCL 741 Dermatril® L

### **Body Protection**

protective clothing

### **Respiratory protection**

required when dusts are generated.

Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

Recommended Filter type: Filter type P2

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

### **Control of environmental exposure**

Do not let product enter drains.

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## **SECTION 9: Physical and chemical properties**

### **9.1 Information on basic physical and chemical properties**

- |                                                 |                              |
|-------------------------------------------------|------------------------------|
| a) Physical state                               | powder                       |
| b) Color                                        | white                        |
| c) Odor                                         | odorless                     |
| d) Melting point/freezing point                 | Melting point/ range: 293 °C |
| e) Initial boiling point and boiling range      | No data available            |
| f) Flammability (solid, gas)                    | No data available            |
| g) Upper/lower flammability or explosive limits | No data available            |
| h) Flash point                                  | Not applicable               |
| i) Autoignition temperature                     | No data available            |
| j) Decomposition                                | No data available            |

temperature

- |                                              |                                                                                            |
|----------------------------------------------|--------------------------------------------------------------------------------------------|
| k) pH                                        | No data available                                                                          |
| l) Viscosity                                 | Viscosity, kinematic: No data available<br>Viscosity, dynamic: > 100 - 200 mPa.s at 400 °C |
| m) Water solubility                          | 851 g/l at 20 °C - OECD Test Guideline 105- completely soluble                             |
| n) Partition coefficient:<br>n-octanol/water | Not applicable for inorganic substances                                                    |
| o) Vapor pressure                            | No data available                                                                          |
| p) Density                                   | 2,93 g/cm <sup>3</sup> at 22 °C                                                            |
| Relative density                             | No data available                                                                          |
| q) Relative vapor<br>density                 | No data available                                                                          |
| r) Particle<br>characteristics               | No data available                                                                          |
|                                              |                                                                                            |
| s) Explosive properties                      | Not classified as explosive.                                                               |
| t) Oxidizing properties                      | none                                                                                       |

## 9.2 Other safety information

No data available

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## SECTION 10: Stability and reactivity

### 10.1 Reactivity

No data available

### 10.2 Chemical stability

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

### 10.3 Possibility of hazardous reactions

Violent reactions possible with:  
sodium  
Strong oxidizing agents

### 10.4 Conditions to avoid

Exposure to moisture.  
no information available

### 10.5 Incompatible materials

various metals

### 10.6 Hazardous decomposition products

In the event of fire: see section 5

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## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

#### Acute toxicity

LD50 Oral - Rat - male - 1.100 mg/kg

(OECD Test Guideline 401)

Acute toxicity estimate Oral - 1.100 mg/kg

(ATE value derived from LD50/LC50 value)

LC50 Inhalation - Rat - female - 10 min -  $\leq 1.975 \text{ mg/m}^3$  - aerosol

Remarks: (ECHA)

LD50 Dermal - Rat - male and female -  $> 2.000 \text{ mg/kg}$

(OECD Test Guideline 402)

#### Skin corrosion/irritation

Skin - Mouse

Remarks: (ECHA)

#### Serious eye damage/eye irritation

Remarks: Risk of blindness!

(Regulation (EC) No 1272/2008, Annex VI)

#### Respiratory or skin sensitization

Maximization Test - Guinea pig

Result: negative

(OECD Test Guideline 406)

#### Germ cell mutagenicity

Test Type: In vitro mammalian cell gene mutation test

Test system: mouse lymphoma cells

Metabolic activation: without metabolic activation

Result: negative

Remarks: (ECHA)

Test Type: Micronucleus test

Species: Mouse

Cell type: Red blood cells (erythrocytes)

Application Route: Intraperitoneal

Result: negative

Remarks: (in analogy to similar products)

(ECHA)

The value is given in analogy to the following substances: Zinc sulphate

#### Carcinogenicity

No data available

#### Reproductive toxicity

No data available

#### Specific target organ toxicity - single exposure

Inhalation - May cause respiratory irritation.

#### Specific target organ toxicity - repeated exposure

No data available

#### Aspiration hazard

No data available

## 11.2 Additional Information

### Endocrine disrupting properties

#### Product:

Assessment

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Repeated dose toxicity - Rat - male and female - Oral - 13 Weeks - NOAEL (No observed adverse effect level) - 31,52 mg/kg - LOAEL (Lowest observed adverse effect level) - 53,8 mg/kg

RTECS: ZH1400000

Zinc chloride and its aqueous solutions are corrosive to the eyes and skin. They cause conjunctivitis and corneal burns in the eye and produce chemical burns, particularly on areas where the skin is broken. Ingestion produces a corrosive action to the mouth, throat, and digestive tract which can include symptoms of stomach pain, nausea, vomiting, bloody diarrhea, swelling of the throat, blood in the urine, and shock. Inhalation irritates the nose and throat producing cough, chest pain, bluish skin, fever, nausea and vomiting, shortness of breath, difficulty in breathing (onset may be delayed by several hours), and pneumonia. Fatalities have occurred by inhalation and ingestion., To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

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## SECTION 12: Ecological information

### 12.1 Toxicity

|                                                                       |                                                                                                                 |
|-----------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| Toxicity to fish                                                      | static test LC50 - Oncorhynchus mykiss (rainbow trout) - 0,169 mg/l - 96 h<br>Remarks: (ECHA)                   |
| Toxicity to daphnia and other aquatic invertebrates                   | static test EC50 - Daphnia magna (Water flea) - 0,33 mg/l - 48 h (OECD Test Guideline 202)                      |
| Toxicity to algae                                                     | static test NOEC - Pseudokirchneriella subcapitata (green algae) - 0,0049 mg/l - 72 h (OECD Test Guideline 201) |
| Toxicity to bacteria                                                  | static test IC50 - activated sludge - 0,35 mg/l - 4 h (ISO 9509)<br>Remarks: (referred to the cation)           |
| Toxicity to fish(Chronic toxicity)                                    | flow-through test NOEC - Oncorhynchus mykiss (rainbow trout) - 0,039 mg/l - 30 d (OECD Test Guideline 215)      |
| Toxicity to daphnia and other aquatic invertebrates(Chronic toxicity) | semi-static test NOEC - Daphnia magna (Water flea) - 0,039 mg/l - 21 d (OECD Test Guideline 211)                |

## 12.2 Persistence and degradability

The methods for determining biodegradability are not applicable to inorganic substances.

## 12.3 Bioaccumulative potential

Bioaccumulation Channa punctata - 45 d  
at 27 °C(zinc chloride)

Bioconcentration factor (BCF): 0,4

## 12.4 Mobility in soil

No data available

## 12.5 Results of PBT and vPvB assessment

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

## 12.6 Endocrine disrupting properties

### Product:

Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

## 12.7 Other adverse effects

No data available

CHEMIKART

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## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

No data available

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## SECTION 14: Transport information

### 14.1 UN number

ADR/RID: 2331

IMDG: 2331

IATA: 2331

### 14.2 UN proper shipping name

ADR/RID: ZINC CHLORIDE, ANHYDROUS

IMDG: ZINC CHLORIDE, ANHYDROUS

IATA: Zinc chloride, anhydrous

### 14.3 Transport hazard class(es)

ADR/RID: 8

IMDG: 8

IATA: 8

### 14.4 Packaging group

ADR/RID: III

IMDG: III

IATA: III

### 14.5 Environmental hazards

ADR/RID: yes

IMDG Marine pollutant: yes

IATA: no

### 14.6 Special precautions for user

Tunnel restriction code : (E)  
Further information : No data available

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## SECTION 15: Regulatory information

### 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.

#### National legislation

Seveso III: Directive 2012/18/EU of the E1 ENVIRONMENTAL HAZARDS  
European Parliament and of the Council  
on the control of major-accident hazards  
involving dangerous substances.

#### Other regulations

Observe work restrictions regarding maternity protection in accordance to Dir 92/85/EEC or stricter national regulations where applicable.

Take note of Dir 94/33/EC on the protection of young people at work.

### 15.2 Chemical Safety Assessment

A Chemical Safety Assessment has been carried out for this substance.

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## SECTION 16: Other information

### Full text of H-Statements

|      |                                                       |
|------|-------------------------------------------------------|
| H302 | Harmful if swallowed.                                 |
| H314 | Causes severe skin burns and eye damage.              |
| H318 | Causes serious eye damage.                            |
| H335 | May cause respiratory irritation.                     |
| H400 | Very toxic to aquatic life.                           |
| H410 | Very toxic to aquatic life with long lasting effects. |

## Full text of other abbreviations

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

## Further information

The information is believed to be correct but is not exhaustive and will be used solely as a guideline, which is based on current knowledge of the chemical substance or mixture and is applicable to appropriate safety precautions for the product. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See [www.sigma-aldrich.com](http://www.sigma-aldrich.com) and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

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