ChemicalBook

Chemical Safety Data Sheet MSDS / SDS

Zinc chloride

Revision Date:2024-04-27 Revision Number:1

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

Product identifier

Product name	: Zinc chloride
CBnumber	: CB4854265
CAS	: 7646-85-7
EINECS Number	: 231-592-0
Synonyms	: ZnCl2,Zinc chloride

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

Relevant identified uses	: For R&D use only. Not for medicinal, household or other use.
Uses advised against	: none

Company Identification

Company	: Chemicalbook
Address	: Building 1, Huihuang International, Shangdi 10th Street, Haidian District, Beijing
Telephone	: 400-158-6606

SECTION 2: Hazards identification

GHS Label elements, including precautionary statements

Symbol(GHS)

Signal word Danger

Precautionary statements

P210 Keep away from heat/sparks/open flames/hot surfaces. — No smoking.

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

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.

P303+P361+P353 IF ON SKIN (or hair): Remove/Take off Immediately all contaminated clothing. Rinse SKIN with water/shower.

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

P310 Immediately call a POISON CENTER or doctor/physician.

P370+P378 In case of fire: Use … for extinction.

P403+P235 Store in a well-ventilated place. Keep cool.

P405 Store locked up.

P501 Dispose of contents/container to.....

Hazard statements

H225 Highly Flammable liquid and vapour

H290 May be corrosive to metals

H302 Harmful if swallowed

H314 Causes severe skin burns and eye damage

H315 Causes skin irritation

H318 Causes serious eye damage

H319 Causes serious eye irritation

H333 May be harmful if inhaled

H335 May cause respiratory irritation

H336 May cause drowsiness or dizziness

H351 Suspected of causing cancer

H400 Very toxic to aquatic life

H401 Toxic to aquatic life

H402 Harmful to aquatic life

H410 Very toxic to aquatic life with long lasting effects

H411 Toxic to aquatic life with long lasting effects

SECTION 3: Composition/information on ingredients

Substance

Product name	: Zinc chloride
Synonyms	: ZnCl2,Zinc chloride
CAS	: 7646-85-7
EC number	: 231-592-0
MF	: Cl2Zn
MW	: 136.3

SECTION 4: First aid measures

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.

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

Indication of any immediate medical attention and special treatment needed

No data available

SECTION 5: Firefighting measures

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.

Special hazards arising from the substance or mixture

Hydrogen chloride gas Zinc/zinc oxides

Not combustible.

Ambient fire may liberate hazardous vapours.

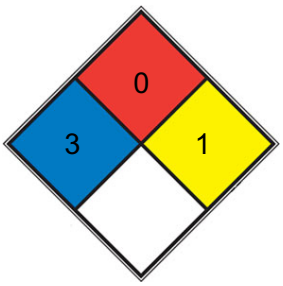
Advice for firefighters

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

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.

NFPA 704



HEALTH	3	Short exposure could cause serious temporary or moderate residual injury (e.g. liquid hydrogen, sulfuric acid, calcium hypochlorite, hexafluorosilicic acid)
FIRE	0	Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand. Materials that will not burn in air when exposed to a temperature of 820 °C (1,500 °F) for a period of 5 minutes.(e.g. Carbon tetrachloride)

☐	REACT	1	Normally stable, but can become unstable at elevated temperatures and pressures (e.g. propene)
☐	SPEC. HAZ.		

SECTION 6: Accidental release measures

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.

Environmental precautions

Do not let product enter drains.

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.

Reference to other sections

For disposal see section 13.

SECTION 7: Handling and storage

Precautions for safe handling

For precautions see section 2.2.

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): 8B: Non-combustible, corrosive hazardous materials

Specific end use(s)

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

SECTION 8: Exposure controls/personal protection

control parameter

Hazard composition and occupational exposure limits

Does not contain substances with occupational exposure limits.

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

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

The selected protective gloves have to satisfy the specifications of Regulation (EU) 2016/425 and the standard EN 374 derived from it.

Full contact

Material: Nitrile rubber

Minimum layer thickness: 0,11 mm Break through time: 480 min

Material tested:Dermatril? (KCL 740 / Aldrich Z677272, Size M)

Splash contact Material: Nitrile rubber

Minimum layer thickness: 0,11 mm Break through time: 480 min

Material tested:Dermatril? (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the EC approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

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 entrepeneur 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.

SECTION 9: Physical and chemical properties

Information on basic physicochemical properties

Appearance	white powder
Odour	odorless
Odour Threshold	No data available

pH	5 (100g/l, H2O, 20℃)
Melting point/freezing point	Melting point/range: 293 °C - lit.
Initial boiling point and boiling range	732 °C (lit.)
Flash point	Not applicable
Evaporation rate	No data available
Flammability (solid, gas)	The product is not flammable.
Upper/lower flammability or explosive limits	No data available
Vapour pressure	1 mm Hg (428 °C)
Vapour density	No data available
Relative density	2.91
Water solubility	851 g/l at 20 °C - OECD Test Guideline 105- completely soluble
Partition coefficient: n-octanol/water	Not applicable for inorganic substances
Autoignition temperature	No data available
Decomposition temperature	No data available
Viscosity	Viscosity, kinematic: No data available Viscosity, dynamic: >100 - 200 mPa.s at 400 °C
Explosive properties	No data available
Oxidizing properties	none

Other safety information

No data available

SECTION 10: Stability and reactivity

Reactivity

No data available

Chemical stability

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

Possibility of hazardous reactions

Violent reactions possible with:

sodium

Strong oxidizing agents

Conditions to avoid

Exposure to moisture. no information available

Incompatible materials

various metals

Hazardous decomposition products

In the event of fire: see section 5

SECTION 11: Toxicological information

Information on toxicological effects

Acute toxicity

LD50 Oral - Rat - male - 1.100 mg/kg (OECD Test Guideline 401)

LC50 Inhalation - Rat - female - 10 min - <= 1.975 mg/m3 Remarks: (ECHA)

LD50 Dermal - Rat - male and female - > 2.000 mg/kg (OECD Test Guideline 402)

Skin corrosion/irritation

Skin - Mouse Remarks: (ECHA)

Serious eye damage/eye irritation

Risk of blindness! (Regulation (EC) No 1272/2008, Annex VI)

Respiratory or skin sensitization

(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

No data available

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

Toxicity

Inhalation of zinc chloride fumes can injure lungs and respiratory tract. Dusts or fumes also cause dermatitis, boils, conjunctivitis, and gastrointestinal tract upset (Lewis(Sr), R.J. 1996. Sax's Dangerous Properties of Industrial Materials, 9th ed. New York: Van Nostrand Reinhold).

LD50 oral (rat): 350mg/kg

LCLO (inhalation): 1.960 g/m3/10 min

SECTION 12: Ecological information

Toxicity

Toxicity to fish

static test LC50 - Oncorhynchus mykiss (rainbow trout) - 0,169 mg/l

- 96 h

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)

Remarks: (referred to the cation)

Persistence and degradability

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

Bioaccumulative potential

Bioaccumulation Channa punctata - 45 d

at 27 °C(zinc chloride)

Bioconcentration factor (BCF): 0,4

Mobility in soil

No data available

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.

Other adverse effects

No data available

SECTION 13: Disposal considerations

Waste treatment methods

Product

See www.retrologistik.com for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

Incompatibilities

Aqueous solutions are strongly acidic. Incompatible with bases and potassium. Incompatible with strong oxidizers (chlorates, nitrates, peroxides, permanganates, perchlorates, chlorine, bromine, fluorine, etc.); contact may cause fires or explosions. Keep away from alkaline materials, strong bases, strong acids, oxoacids, epoxides. Corrosive to metals.

Waste Disposal

Dump in water; add soda ash and stir, then neutralize and flush to sewer with water. Alternatively, zinc chloride may be recovered from spent catalysts and used in acrylic fiber spinning solutions.

SECTION 14: Transport information

UN number

ADR/RID: 2331 IMDG: 2331 IATA: 2331

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	
	No data available	

SECTION 15: Regulatory information

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

Regulations on the Safety Management of Hazardous Chemicals

China Catalog of Hazardous chemicals 2015:Listed. website: https://www.mem.gov.cn/

Measures for Environmental Management of New Chemical Substances

Chinese Chemical Inventory of Existing Chemical Substances (China IECSC):Listed. website: https://www.mee.gov.cn/

EC Inventory:Listed.

European Inventory of Existing Commercial Chemical Substances (EINECS):Listed. website: https://echa.europa.eu/

Korea Existing Chemicals List (KECL):Listed. website: http://ncis.nier.go.kr

New Zealand Inventory of Chemicals (NZIoC):Listed. website: https://www.epa.govt.nz/

Philippines Inventory of Chemicals and Chemical Substances (PICCS):Listed. website: https://emb.gov.ph/

United States Toxic Substances Control Act (TSCA) Inventory:Listed. website: https://www.epa.gov/

Vietnam National Chemical Inventory:Listed. website: https://chemicaldata.gov.vn/

SECTION 16: Other information

Abbreviations and acronyms

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

CAS: Chemical Abstracts Service

EC50: Effective Concentration 50%

IATA: International Air Transportation Association

IMDG: International Maritime Dangerous Goods

LC50: Lethal Concentration 50%

LD50: Lethal Dose 50%

RID: Regulation concerning the International Carriage of Dangerous Goods by Rail

STEL: Short term exposure limit

TWA: Time Weighted Average

References

【1】CAMEO Chemicals, website: http://cameochemicals.noaa.gov/search/simple

【2】ChemIDplus, website: http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp

【3】ECHA - European Chemicals Agency, website: https://echa.europa.eu/

【4】eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website: http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en

【5】ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: http://www.phmsa.dot.gov/hazmat/library/erg

【6】Germany GESTIS-database on hazard substance, website: http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp

【7】HSDB - Hazardous Substances Data Bank, website: https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm

【8】IARC - International Agency for Research on Cancer, website: http://www.iarc.fr/

【9】IPCS - The International Chemical Safety Cards (ICSC), website: http://www.ilo.org/dyn/icsc/showcard.home

【10】Sigma-Aldrich, website: https://www.sigmaaldrich.com/

Other Information

Other UN: 1840 Zinc chloride solution, Hazard Class 8.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 is therefore essential.