

ZINC CHLORIDE

Date of compilation: 17-08-2026 | Revised: 17-08-2026 | Version: 1

SECTION 1: IDENTIFICATION

1.1 GHS Product identifier:

ZINC CHLORIDE
Zinc dichloride; Butter of zinc
CAS: 7646-85-7

Other means of identification:

Not relevant

1.2 Recommended use of the chemical and restrictions on use:

Relevant uses: Soldering/galvanizing flux, textile mercerizing and dyeing auxiliary, wood preservative, dry-cell battery electrolyte component, chemical intermediate, water treatment, deodorant manufacture. For industrial user only.
Uses advised against: All uses not specified in this section or in section 7.3.

1.3 Supplier's details:

SURAJ CHEMICALS
No 92, Govindappa Naicken Street, Shiva Complex, Chennai – 600001, Tamil Nadu, India
Tel: +91 - 7092722822, +91 - 9840284032 / +91 - 44 - 25393652, 42130281
Email: sales@surajchemicals.com | Website: www.surajchemicals.com
GST No: 33ACEPV8190L1ZZ

1.4 Emergency phone number:

Emergency Contact No: +91 - 7092722822, +91 - 9840284032

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture:

GHS:
Classification of this product has been carried out in accordance with the Globally Harmonized System of Classification and Labelling of Chemicals (GHS).

Skin Corr. 1B	Skin corrosion, Category 1B, H314
Eye Dam. 1	Serious eye damage, Category 1, H318
Aquatic Acute 1	Hazardous to the aquatic environment, acute hazard, Category 1, H400

2.2 GHS label elements, including precautionary statements:

GHS: Danger

Hazard statements:

Skin Corr. 1B: H314 – Causes severe skin burns and eye damage.
Eye Dam. 1: H318 – Causes serious eye damage.
Aquatic Acute 1: H400 – Very toxic to aquatic life.

Precautionary statements:

P260: Do not breathe dust/mist.
P264: Wash hands thoroughly after handling.
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.
P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.
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 or doctor/physician.
P321: Specific treatment (see first aid measures on this label).
P363: Wash contaminated clothing before reuse.
P391: Collect spillage.
P405: Store locked up.
P501: Dispose of contents/container in accordance with local/national regulations.

2.3 Other hazards which do not result in classification:

Not relevant

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

3.1 Substances:

Chemical description: Zinc chloride
In accordance with Annex 4.3.3 of the GHS, the product contains:

Identification	Chemical Name / Classification	Concentration
CAS: 7646-85-7	Zinc chloride — Skin Corr. 1B: H314; Eye Dam. 1: H318; Aquatic Acute 1: H400 – Danger	≥ 95%

To obtain more information on the hazards of the substances, consult sections 11, 12 and 16.

3.2 Mixtures:

Non-applicable

SECTION 4: FIRST AID MEASURES

4.1 Description of necessary first-aid measures:

Request medical assistance immediately, showing the SDS of this product.

By inhalation:

Remove the person affected from the area of exposure, provide fresh air and keep at rest. Seek medical attention if breathing difficulty develops.

By skin contact:

Remove contaminated clothing immediately. Rinse skin immediately with plenty of water for at least 15 minutes. Seek medical attention – the product causes burns.

By eye contact:

Rinse eyes immediately with plenty of lukewarm water for at least 15 minutes, holding eyelids open. Remove contact lenses if present and easy to do. Seek immediate medical/ophthalmological attention.

By ingestion/aspiration:

Rinse mouth with water. Do NOT induce vomiting due to risk of burns to the oesophagus. Give water to drink if the person is conscious. Seek immediate medical attention.

4.2 Most important symptoms/effects, acute and delayed:

Causes severe burns to skin and eyes. May cause respiratory irritation if dust/mist is inhaled. Acute and delayed effects are further indicated in section 11.

4.3 Indication of immediate medical attention and special treatment needed, if necessary:

Treat symptomatically. No specific antidote. Contact a Poison Information Centre in case of accidental ingestion or severe exposure.

SECTION 5: FIRE-FIGHTING MEASURES

5.1 Suitable extinguishing media:

Suitable: Water spray, foam, dry chemical powder, carbon dioxide – select per surrounding fire.

Unsuitable: None known.

5.2 Specific hazards arising from the chemical:

Non-combustible solid. Does not itself burn. On heating/decomposition in fire, may release hydrogen chloride and zinc oxide fumes.

5.3 Special protective actions for fire-fighters:

Wear self-contained breathing apparatus and full protective clothing to avoid contact with the product and its decomposition fumes.

Additional provisions:

Cool fire-exposed containers with water spray if safe to do so. Contain fire-fighting water to prevent environmental discharge.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures:

For non-emergency personnel:

Avoid contact with skin and eyes. Use personal protective equipment as described in section 8. Ventilate the area and avoid generating dust.

For emergency responders:

Wear full protective equipment (section 8). Keep unprotected persons away.

6.2 Environmental precautions:

Avoid at all cost any discharge into drains, soil or water courses – the product is very toxic to aquatic life. Contain spillage and notify the relevant authority in case of significant release to the environment.

6.3 Methods and materials for containment and cleaning up:

Dike to contain liquid spills/solutions. For solid spills, sweep or vacuum (avoiding dust) into a suitable labelled container. Neutralise residues per local guidance and dispose of as hazardous waste. Do not flush to drains.

6.4 Reference to other sections:

See sections 8 and 13.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling:

A. General precautions for safe use:

Avoid contact with skin and eyes and avoid breathing dust or mist. Handle with adequate ventilation. The product is hygroscopic – keep containers closed when not in use.

B. Technical recommendations for the prevention of fires and explosions:

Not applicable – the product is non-combustible and non-explosive.

C. Technical recommendations on general occupational hygiene:

Do not eat, drink or smoke while handling. Wash hands and exposed skin thoroughly after handling.

D. Technical recommendations to prevent environmental risks:

Prevent product or spillage from reaching drains, soil or water courses. Follow protective measures of section 8.

7.2 Conditions for safe storage, including any incompatibilities:

A. Specific storage requirements:

Storage temperature	Ambient, dry conditions
Storage condition	Tightly closed containers, protected from moisture
Shelf life	Typical value – refer to current specification sheet

B. General conditions for storage:

Store away from incompatible materials (section 10), strong oxidisers and alkali metals. Keep containers tightly closed and store in a dry, well-ventilated area, separated from foodstuffs.

7.3 Specific end use(s):

Except for the instructions already specified, it is not necessary to provide any special recommendation regarding the uses of this product.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters:

Occupational exposure limits applicable to zinc chloride fume (as published in widely referenced international OEL lists, used here as reference guidance):

Identification	Occupational Exposure Limit Type	Value
Zinc chloride fume CAS: 7646-85-7	Time Weighted average concentration (8 hrs)	1 mg/m³
	Short-term exposure limit (15 min)	2 mg/m³

8.2 Appropriate engineering controls:

Use local exhaust ventilation where dust/mist may be generated, in order to keep exposure below the limits in 8.1. Provide eyewash and safety shower facilities near the work area.

B. Respiratory protection:

Use a particulate filtering respirator where exposure limits may be exceeded; use a full-face respirator with appropriate filter when handling dust/mist in poorly ventilated areas.

C. Specific protection for the hands:

Chemical-resistant gloves (e.g. nitrile, neoprene or PVC). Replace at any sign of damage or degradation.

D. Eye and face protection:

Chemical splash goggles or full-face shield mandatory – the product causes serious eye damage.

E. Bodily protection:

Acid/chemical-resistant protective clothing and footwear. Replace at any sign of deterioration.

F. Additional emergency measures:

Emergency shower (ANSI Z358-1) and eyewash stations should be readily available near the work area.

Environmental exposure controls:

Avoid environmental spillage of the product and its container. See subsection 7.1.D.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties:

Appearance	
Physical state at 20°C	Solid (crystalline powder/granules)
Appearance	Hygroscopic crystalline solid
Color	White to off-white
Odor	Odorless
Odour threshold	Not applicable
Volatility	
Boiling point at atmospheric pressure	732°C
Vapour pressure at 20°C	Negligible
Evaporation rate at 20°C	Not relevant (solid)
Product Description	
Density / Relative density at 20°C	2.91 g/cm³
pH (5% aqueous solution)	4 – 5 (acidic, due to hydrolysis)
Solubility in water at 20°C	Highly soluble (> 430 g/100 mL)
Partition coefficient n-octanol/water	Not applicable (inorganic salt)
Decomposition temperature	Decomposes above ~732°C
Melting point/freezing point	290°C
Flammability	
Flash Point	Not applicable (solid, non-flammable)
Flammability (solid, gas)	Non-flammable
Autoignition temperature	Not applicable
Lower / Upper flammability limit	Not applicable
Particle Characteristics	
Median particle size	Typical value – refer to current specification sheet

Values above are typical for the commercial grade; refer to current specification sheet for guaranteed values.

9.2 Other information:

Explosive properties	Not explosive
Oxidising properties	Not an oxidiser
Corrosive to metals	Corrosive to common metals in moist conditions (forms HCl on hydrolysis)
Self-heating	Not self-heating
Water reactivity	Dissolves exothermically; not violently reactive

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity:

Hygroscopic; hydrolyses in moist air/water to give an acidic solution. Reacts with strong alkalis (exothermic neutralisation) and with active metals to evolve hydrogen gas under certain conditions.

10.2 Chemical stability:

Chemically stable under the indicated conditions of storage, handling and use when kept dry.

10.3 Possibility of hazardous reactions:

Under the specified conditions, hazardous reactions are not expected other than those noted in 10.1 and 10.5.

10.4 Conditions to avoid:

Shock/Friction	Contact with Air	Increase in Temperature	Sunlight	Humidity
Not applicable	Absorbs moisture	Not applicable	Not applicable	Avoid contact with moisture

10.5 Incompatible materials:

Strong Alkalis	Active Metals	Strong Oxidisers
Avoid direct contact (exothermic)	Avoid contact (risk of hydrogen gas evolution)	Avoid direct contact

10.6 Hazardous decomposition products:

On thermal decomposition/fire: hydrogen chloride gas and zinc oxide fume.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects:

In case of exposure that is repetitive, prolonged, or at concentrations higher than the recommended occupational exposure limits, adverse health effects may result depending on the means of exposure:

A. Ingestion (acute effect):

Corrosive; causes burns to the mouth, throat, oesophagus and stomach. May cause nausea, vomiting and abdominal pain.

B. Inhalation (acute effect):

Dust/mist/fume causes irritation and may cause burns to the respiratory tract; may cause coughing and difficulty breathing (metal fume type effects reported for zinc chloride fume, including "zinc chloride lung" at high exposure).

C. Contact with skin and eyes (acute effect):

Causes severe skin burns. Causes serious eye damage, potentially with permanent injury.

D. CMR effects (carcinogenicity, mutagenicity, reproductive toxicity):

Classification criteria for carcinogenicity, mutagenicity and reproductive toxicity are not met based on available data. Not listed by IARC.

E. Sensitizing effects:

Classification criteria for respiratory or skin sensitisation are not met based on available data.

F. Specific target organ toxicity (STOT) – single exposure:

May cause respiratory irritation at high dust/mist concentrations.

G. Specific target organ toxicity (STOT) – repeated exposure:

Classification criteria are not met based on available data.

H. Aspiration hazard:

Classification criteria are not met based on available data.

Product-specific toxicological information:

Identification	Acute Toxicity	Genus
Zinc chloride CAS: 7646-85-7	LD50 oral: 350 mg/kg bw	Rat
	LD50 dermal: > 2000 mg/kg bw	Rabbit
	LC50 inhalation (dust/mist, 1h): 1.2 mg/L	Rat

SECTION 12: ECOLOGICAL INFORMATION

Very toxic to aquatic life.

12.1 Toxicity:

Identification	Acute Toxicity	Species	Genus
Zinc chloride CAS: 7646-85-7	LC50: 0.7 mg/L (96h, as Zn)	Oncorhynchus mykiss	Fish
	EC50: 0.1 – 1.0 mg/L (48h, as Zn)	Daphnia magna	Crustacean

12.2 Persistence and degradability:

Inorganic substance; the concept of biodegradability is not applicable. The zinc ion does not degrade but may be transformed (speciation, precipitation) in the environment.

12.3 Bioaccumulative potential:

Zinc is an essential trace element; bioaccumulation is regulated physiologically in most organisms but may occur at elevated environmental concentrations.

12.4 Mobility in soil:

Koc	Henry	Dry Soil	Moist Soil
Not relevant	Not relevant	Moderate (soluble salt)	Moderate (soluble salt)

12.5 Results of PBT and vPvB assessment:

Not applicable (inorganic substance).

12.6 Other adverse effects:

Toxic to aquatic organisms even at low concentrations; avoid release to the environment.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Disposal methods:

Neutralise with an alkaline agent (e.g. lime or soda ash) under controlled conditions, then dispose of the resulting precipitate/residue as hazardous waste via a licensed waste disposal contractor, in accordance with local and national regulations. Do not discharge to drains or water courses. Avoid treatments for packaging as far as possible; use dedicated containers.

Refer to national and local regulations on waste management.

SECTION 14: TRANSPORT INFORMATION

Transport of dangerous goods by land (ADR / RID):

14.1 UN number	UN2331
14.2 UN proper shipping name	ZINC CHLORIDE, ANHYDROUS
14.3 Transport hazard class(es)	8
14.4 Packing group	III
14.5 Environmental hazard	Yes
14.6 Special precautions for user	Physico-chemical properties: see section 9
14.7 Transport in bulk (Annex II MARPOL 73/78, IBC Code)	Not relevant

Transport of dangerous goods by sea (IMDG):

14.1 UN number	UN2331
14.2 UN proper shipping name	ZINC CHLORIDE, ANHYDROUS
14.3 Transport hazard class(es)	8
14.4 Packing group	III
14.5 Marine pollutant	Yes
14.6 Special precautions for user	EmS Codes: F-A, S-B
14.7 Transport in bulk (Annex II MARPOL 73/78, IBC Code)	Not relevant

Transport of dangerous goods by air (IATA/ICAO):

14.1 UN number	UN2331
14.2 UN proper shipping name	ZINC CHLORIDE, ANHYDROUS
14.3 Transport hazard class(es)	8
14.4 Packing group	III
14.5 Environmental hazard	Yes
14.6 Special precautions for user	Physico-chemical properties: see section 9
14.7 Transport in bulk (Annex II MARPOL 73/78, IBC Code)	Not relevant

SECTION 15: REGULATORY INFORMATION

15.1 Safety, health and environmental regulations specific for the product in question:

It is recommended to use the information included in this safety data sheet as data used in a risk evaluation of local circumstances, in order to establish the necessary risk prevention measures for the manipulation, use, storage and disposal of this product.

Other legislation:

Manufacture, Storage and Import of Hazardous Chemicals Rules 1989
The Factories Act, 1948 (Act No. 63 of 1948), as amended by the Factories (Amendment) Act, 1987 (Act 20 of 1987)

SECTION 16: OTHER INFORMATION

Legislation related to safety data sheets:

This safety data sheet has been designed in accordance with Annex 4 – Guidance on the preparation of Safety Data Sheets of the Globally Harmonized System of Classification and Labelling of Chemicals (GHS).

Texts of the legislative phrases mentioned in sections 2 and 3:

- H314: Causes severe skin burns and eye damage.
- H318: Causes serious eye damage.
- H400: Very toxic to aquatic life.

The phrases indicated do not refer to the product itself; they are present merely for informative purposes and refer to the individual components which appear in section 3.

Advice related to training:

Minimal training is recommended to prevent industrial risks for staff using this product, in order to facilitate their comprehension and interpretation of this safety data sheet, as well as the label on the product.

Principal bibliographical sources:

The United Nations Economic Commission for Europe (UNECE); publicly available GHS classification references for the listed CAS number.

Abbreviations and acronyms:

- ADR: European agreement concerning the international carriage of dangerous goods by road | IMDG: International maritime dangerous goods code | IATA: International Air Transport Association | ICAO: International Civil Aviation Organisation | LD50: Lethal Dose 50 | LC50: Lethal Concentration 50 | EC50: Effective Concentration 50 | IARC: International Agency for Research on Cancer

The information contained in this safety data sheet is based on sources, technical knowledge and current legislation, without being able to guarantee its accuracy. This information cannot be considered a guarantee of the properties of the product; it is simply a description of the security requirements. The occupational methodology and conditions for users of this product are not within Suraj Chemicals' awareness or control, and it is ultimately the responsibility of the user to take the necessary measures to obtain the legal requirements concerning the manipulation, storage, use and disposal of chemical products. The information on this safety data sheet only refers to this product, which should not be used for needs other than those specified.

END OF SAFETY DATA SHEET