WEST BENGAL CHEMICAL INDUSTRIES LIMITED
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Section 1 - Chemical Product and Company Identification

1.1 MSDS Name: Zinc Acetate Dihydrate

1.2 Product Code: ZAD9600

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

Laboratory chemicals, Manufacture of substances

1.4 Company Identification:

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Section 2 - Hazards Identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

2.2 Label elements Labelling according Regulation (EC) No 1272/2008

2.2.1 Hazard classification

Acute Tox. 4 (92.1%)

Skin Irrit. 2 (19.1%)

Eye Dam. 1 (34.8%)

Eye Irrit. 2 (33.3%)

Aquatic Acute 1 (31.2%)

Aquatic Chronic 1 (38.8%)

Aquatic Chronic 2 (34.5%)

2.3 Signal:

Danger

2.4 Hazard Statements:

H302 (92.1%): Harmful if swallowed

H315 (19.1%): Causes skin irritation

H318 (34.8%): Causes serious eye damage

H319 (33.3%): Causes serious eye irritation

H400 (31.2%): Very toxic to aquatic life

H410 (38.8%): Very toxic to aquatic life with long lasting effects

2.5 Precautionary Statement Codes

Prevention

- P264: Wash hands and exposed skin thoroughly after handling.

- P264+P265: Wash hands and skin contact areas thoroughly after handling. Avoid contact with eyes before washing hands.
- P270: Do not eat, drink, or smoke when using this product.
- P273: Avoid release into the environment.
- P280: Wear protective gloves, protective clothing, eye protection, and face protection.

Response

- P301+P317 (Ingestion): If swallowed, seek medical attention immediately.
- P302+P352 (Skin Contact): If on skin, wash with plenty of water.
- P305+P351+P338 (Eye Contact - General Rinse): If in eyes, rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.
- P305+P354+P338 (Eye Contact - Immediate Rinse): If in eyes, immediately rinse with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.
- P317: Seek medical attention if symptoms persist.
- P321: Specific treatment may be required (refer to product-specific SDS or medical guidelines).
- P330: Rinse mouth thoroughly.
- P332+P317 (Skin Irritation): If skin irritation occurs, seek medical attention.
- P337+P317 (Eye Irritation): If eye irritation persists, seek medical attention.

Storage & Containment

- P362+P364: Remove contaminated clothing and wash before reuse.
- P391: Collect spillage to prevent environmental contamination.

Disposal

- P501: Dispose of contents and container in accordance with local, regional, national, and international regulations.

2.6 Other hazards:
Results of PBT and vPvB assessment According to the results of its assessment, this substance is not a PBT or a vPvB. Endocrine disrupting properties Does not contain an endocrine disruptor (ED) at a concentration of ≥ 0,1%.

2.7 Pictogram:

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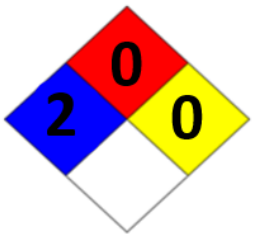
2.8 NFPA Rating:



NFPA SCALE (0-4)

2.9 HMIS Rating:

Health	**2**
Flammability	**0**
Physical Hazard	**0**
Personal protection	**E**

HMIS RATINGS (0-4)

Section 3 - Composition / Information on Ingredients

3.1 Chemical Name: Zinc Acetate Dihydrate
3.2 Molecular Formula: $C_4H_6O_4Zn \cdot 2H_2O$
3.3 Molecular Weight: 219.51 g/mol
3.4 Synonym: Zinc(II) Acetate Dihydrate
3.5 CAS Number: 5970-45-6
3.6 EC Number: 209-170-2
3.7 % wt: 100%

Section 4 - First Aid Measures

4.1 Description of first aid measures:

4.1.1 General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

4.1.2 If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

4.1.3 In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

4.1.4 In case of eye contact

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Section 4 - First Aid Measures

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

4.1.5 If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

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

Section 5 - Fire-Fighting Measures

5.1 Extinguishing media:

5.1.1 Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.1.2 Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

5.2 Special hazards arising from the substance or mixture:

Carbon oxides, Zinc/zinc oxides

5.3 Advice for firefighters:

In case of fire and/or explosion do not breathe fumes. Do not allow firefighting water to enter drains or water courses. Fight fire with normal precautions from a reasonable distance. Wear self-contained breathing apparatus.

5.4 Protective Equipment and Precautions for Firefighters:

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

5.5 Further information:

no data available

Section 6 - Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures:

Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Avoid breathing dust. For personal protection see section 8.

6.2 Environmental precautions:

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up:

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

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Section 6 - Accidental Release Measures

6.3.1 Advice on how to contain a spill:
Covering of drains. Take up mechanically.
6.3.2 Advice on how to clean up a spill:
Take up mechanically. Control of dust.
6.3.3 Other information relating to spills and releases:
Place in appropriate containers for disposal. Ventilate affected area.
6.4 Reference to other sections:
For disposal see section 13.

Section 7 - Handling and Storage

7.1 Precautions for safe handling:
Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. For precautions see section 2.2.
7.1.1 Advice on general occupational hygiene:
Wash hands before breaks and after work. Keep away from food, drink and animal feeding stuffs
7.2 Conditions for safe storage, including any incompatibilities:
Store in dry place. Keep container tightly closed in a dry and well-ventilated place.
7.2.1 Storage conditions
Tightly closed. Dry.
7.2.2 Storage class
Storage class (TRGS 510): 11: Combustible Solids
7.2.3 Recommended storage temperature:
15 – 25 °C
7.3 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

8.1 Control parameters:
Components with workplace control parameters
Occupational exposure limit values (Workplace Exposure Limits)
This information is not available.
Human health values
Relevant DNELs and other threshold levels

Endpoint	Threshold Level	Protection Goal, Route of Exposure	Used In	Exposure Time

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Section 8 - Exposure Controls / Personal Protection

DNEL	4.71 mg/m³	Human, Inhalatory	Worker (Industry)	Chronic – Systemic Effects
DNEL	1.353 mg/kg bw/day	Human, Dermal	Worker (Industry)	Chronic – Systemic Effects

8.2 Environmental values:

Relevant PNECs and other threshold levels

End-point	Threshold Level	Organism	Environmental Compartment	Exposure Time
PNEC	0.002 mg/l	Aquatic organisms	Freshwater	Short-term (single instance)
PNEC	0 mg/l	Aquatic organisms	Marine water	Short-term (single instance)
PNEC	0 mg/l	Aquatic organisms	Sewage treatment plant (STP)	Short-term (single instance)
PNEC	0.008 mg/kg	Aquatic organisms	Freshwater sediment	Short-term (single instance)
PNEC	0.001 mg/kg	Aquatic organisms	Marine sediment	Short-term (single instance)
PNEC	0 mg/kg	Terrestrial organisms	Soil	Short-term (single instance)

8.3 Exposure controls:

8.3.1 Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday

8.4 Personal protective equipment:

8.4.1 Eye/face protection

Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

8.4.2 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 EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: 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

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Section 8 - Exposure Controls / Personal Protection

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Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0,11 mm

Break through time: 480 min

Material tested: KCL 741 Dermatril® L

Body Protection

Complete suit protecting against chemicals, the type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

8.4.3 Respiratory protection

For nuisance exposures use type P95 (US) or type P1 (EU EN 143) particle respirator. For higher level protection use type OV/AG/P99 (US) or type ABEK-P2 (EU EN 143) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

8.4.4 Hygiene Measures: Handle in accordance with good industrial hygiene and safety practice. When using do not eat, drink or smoke. Provide regular cleaning of equipment, work area and clothing

8.5 Control of environmental exposure

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Section 9 - Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Appearance Form	:	Crystalline or Granules
Color	:	White
Odour	:	Slight acetous Odour
pH (5% w/v)	:	6.0 – 8.0
Melting point/freezing point	:	237 °C at 1.013 hPa e
Initial boiling point and boiling range	:	ca.258 °C at 1.013 hPa - OECD Test Guideline 103
Flammability (solid, gas)	:	no data available
Upper/lower flammability or explosive limits		no data available
Flash point		Not applicable
Auto ignition temperature		>410°C (ECHA)
Decomposition temperature		> 100 °C Elimination of water of crystallization
Density	:	ca.1,74 g/cm3 at 20 °C - (anhydrous substance)
Relative density		No data available

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Section 9 - Physical and Chemical Properties

Relative vapor density		No data available
Particle characteristics		No data available
Explosive properties		No data available
Oxidizing properties		none
Vapour pressure	:	0.001 Pa at 25°C
Refractive density at 20°C	:	1.735 g/cm^3
Water solubility	:	ca.434.78 g/L at 25°C
Viscosity, kinematic	:	no data available
Viscosity, dynamic		no data available
Partition coefficient n-octanol/water (log value)	:	-1.28 (ECHA)

9.2 Other safety information

Solubility in other solvents Ethanol at 20 °C : soluble

Section 10 - Stability and Reactivity

10.1 Reactivity:

no data available

10.2 Chemical stability:

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions:

no data available

10.4 Conditions to avoid:

Incompatible products. Excess heat. Avoid dust formation.

10.5 Incompatible materials:

Oxidizing agents

10.6 Hazardous decomposition products:

Carbon monoxide (CO), Carbon dioxide (CO2), Zinc

10.7 Hazardous Polymerization:

Hazardous polymerization does not occur.

10.8 Other decomposition products:

no data available

10.9 In the event of fire:

see section 5

Section 11 - Toxicological Information

11.1 Information on toxicological effects:

Acute toxicity

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Section 11 - Toxicological Information

LD50 Oral - Rat - male - 663 mg/kg Zinc acetate
LD50 Oral - Rat - 794 mg/kg Zinc acetate dehydrate
LD50 Intraperitoneal - Rat - 162 mg/kg
LD50 Oral - Mouse - 287 mg/kg
LD50 Intraperitoneal – Mouse - 108 mg/kg
Remarks: Sense Organs and Special Senses (Nose, Eye, Ear, and Taste):
11.1.1 Eye: Miosis (pupillary constriction)
Vascular: BP elevation not characterized in autonomic section.
Nutritional and Gross Metabolic: Weight loss or decreased weight gain.
11.1.2 Skin corrosion/irritation
Skin – rabbit
Result: Mild skin irritation - 24 h
11.1.3 Serious eye damage/eye irritation
Eyes - rabbit
Result: Moderate eye irritation - 24 h
11.1.4 Respiratory or skin sensitization
no data available

11.2 Germ cell mutagenicity:

Human lymphocyte Cytogenetic analysis

11.3 Carcinogenicity:

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

11.4 Reproductive toxicity:

no data available

11.5 Endocrine disrupting properties:

Does not contain an endocrine disruptor (ED) at a concentration of ≥ 0,1%.

11.6 Information on other hazards:

There is no additional information.

11.7 Specific target organ toxicity - single exposure:

no data available

11.8 Specific target organ toxicity - repeated exposure:

no data available

11.9 Aspiration hazard:

no data available

Section 12 - Ecological Information

12.1 Toxicity:

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Section 12 - Ecological Information

Toxicity to fish

Static test LC50 - Pimephales promelas (fathead minnow) - 2,46 mg/l - 96 h

(OECD Test Guideline 203) Remarks: (anhydrous substance)

Toxicity to daphnia and other aquatic invertebrates

Semi-static test - Daphnia magna (Water flea) - 3,72 mg/l - 48 h

(OECD Test Guideline 202) Remarks: (anhydrous substance)

Toxicity to algae

Static test EC50 - algae - 2,1 mg/l - 72 h

(OECD Test Guideline 201) Remarks: (anhydrous substance)

48h-LC50 of zinc acetate in Brown mussel (Perna indica) was 6.38 mg/L.

8h-NOEC of zinc acetate in Tetrahymena was 91.74 mg/L.

EC0 for Clostridium sp. is equal or greater than 4.8 µmol/L

12.2 Persistence and degradability:

Theoretical Oxygen Demand: 0.5102 mg/mg

Theoretical Carbon Dioxide: 0.802 mg/mg

12.2.1 Biodegradation

The substance is readily biodegradable

12.2.2 Process of degradability

Process	Degradation Rate	Time
DOC removal	99%	28 d

12.3 Bio-accumulative potential:

Does not significantly accumulate in organisms

Parameter	Value	Source
n-octanol/water (log KOW)	-1.28	ECHA
BCF	3.162	ECHA

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.

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

12.6 Other adverse effects:

Very toxic to aquatic life with long lasting effects.

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Section 12 - Ecological Information

Toxicity to daphnia and other aquatic invertebrates
Biodegradability aerobic - Exposure time 28 d
Result: 99 % - Readily biodegradable.
(OECD Test Guideline 301A)
Remarks: (anhydrous substance)

Section 13 - Disposal Considerations

13.1 Waste treatment methods:
Product
Offer surplus and non-recyclable solutions to a licensed disposal company. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.
13.2 Contaminated packaging
Dispose of as unused product.

Section 14 - Transport Information

14.1 UN number
ADR/RID: 3077
IMDG: 3077
IATA: 3077
14.2 UN proper shipping name
ADR/RID: ENVIRONMENTALLY HAZARDOUS SUBSTANCE
IMDG: ENVIRONMENTALLY HAZARDOUS SUBSTANCE
HAZARDOUS SUBSTANCE IATA: Environmentally hazardous substance, solid, n.o.s. (Zinc di(acetate))
14.3 Transport hazard class(es)
ADR/RID: 9
IMDG: 9
IATA: 9
Packaging group
ADR/RID: III
IMDG: III
IATA: III
14.5 Environmental hazards
ADR/RID: Yes
IMDG: Marine pollutant: Yes
IATA: Yes

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Information for each of the UN Model Regulations Agreement concerning the International Carriage of Dangerous Goods by Road (ADR)Additional information

14.6 Special precautions for user

no data available

Section 15 - Regulatory Information

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

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

no data available

15.2 Chemical Safety Assessment

For this product a chemical safety assessment was not carried out

Section 16 - Other Information

Full text of H-Statements referred to under sections 2 and 3.

Acute Tox.	:	Acute toxicity
Aquatic Acute	:	Acute aquatic toxicity
Aquatic Chronic	:	Chronic aquatic
toxicity Eye Irrit.	:	Eye irritation
H302	:	Harmful if swallowed.
H319	:	Causes serious eye irritation.
H400	:	Very toxic to aquatic life.

Full text of R-phrases referred to under sections 2 and 3

N	:	Dangerous for the environment
Xn	:	Harmful
R22	:	Harmful if swallowed.
R36	:	Irritating to eyes.
R50/53	:	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
Disclaimer	:	This material safety data sheet is provided as an information resource only. WEST BENGAL CHEMICAL INDUSTRIES LIMITED believes the information contained herein is accurate and compiled from reliable sources. It is the responsibility of the user to verify its validity. The buyer assumes all responsibility of using and handling the product in accordance with federal, state, and local regulations.

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