



### Section 1 - Chemical Product and Company Identification

1.1 MSDS Name: Zinc Acetate Dihydrate

1.2 Product Code: ZAD9600

1.3 Company Identification:

WEST BENGAL CHEMICAL INDUSTRIES LIMITED

145/1, Jessore Road, Lake Town, Kolkata – 700 089, India.

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### Section 2 - Composition / Information on Ingredients

Chemical Name : Zinc Acetate Dihydrate

Molecular Formula :  $C_4H_6O_4Zn \cdot 2H_2O$

Molecular Weight : 219,51 g/mol

CAS Number : 5970-45-6

EC Number : 209-170-2

Hazardous ingredients according to Regulation (EC) No 1272/2008

| Component | Classification | Concentration |
|-----------|----------------|---------------|
|-----------|----------------|---------------|

|         |           |                             |          |
|---------|-----------|-----------------------------|----------|
| CAS-No. | 5970-45-6 | Acute Tox. 4; Eye Irrit. 2; | <= 100 % |
|---------|-----------|-----------------------------|----------|

Aquatic Acute 1; Aquatic

Chronic 1; H302, H319, H410

|        |           |                           |          |
|--------|-----------|---------------------------|----------|
| EC-No. | 209-170-2 | Xn, N, R22 - R36 - R50/53 | <= 100 % |
|--------|-----------|---------------------------|----------|

Hazardous ingredients as per Directive 1999/45/EC

For the full text of the H-Statements and R-Phrases mentioned in this Section, see Section 16

### Section 3 - Hazards Identification

section 2: H302 (98.7%): Harmful if swallowed  
[Warning Acute toxicity, oral]

H315 (20.45%): Causes skin irritation [Warning  
Skin corrosion/irritation]

H318 (37.34%): Causes serious eye damage  
[Danger Serious eye damage/eye irritation]



GHS05

GHS09

GHS07

Signal: Danger





### Section 3 - Hazards Identification

**H319 (35.71%):** Causes serious eye irritation  
[Warning Serious eye damage/eye irritation]  
**H400 (33.44%):** Very toxic to aquatic life  
[Warning Hazardous to the aquatic environment,  
acute hazard]  
**H410 (41.56%):** Very toxic to aquatic life with  
long lasting effects [Warning Hazardous to the  
aquatic environment, long-term hazard]  
**H411 (37.01%):** Toxic to aquatic life with long  
lasting effects [Hazardous to the aquatic  
environment, long-term hazard]  
**Acute Tox. 4** (98.7%)  
**Skin Irrit. 2** (20.45%)  
**Eye Dam. 1** (37.34%)  
**Eye Irrit. 2** (35.71%)  
**Aquatic Acute 1** (33.44%)  
**Aquatic Chronic 1** (41.56%)  
**Aquatic Chronic 2** (37.01%)  
**Acute toxicity** - category 4  
**Eye damage** - category 1  
**P264:** Wash hands [and ...] thoroughly after  
handling.  
**P270:** Do not eat, drink or smoke when using this  
product.  
**P273:** Avoid release to the environment.  
**P280:** Wear protective gloves/protective  
clothing/eye protection/face protection/hearing  
protection  
**P302+P352:** IF ON SKIN: wash with plenty of  
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.  
**P321:** Specific treatment  
**P330:** Rinse mouth.  
**P391:** Collect spillage.  
**P264+P265:** Wash hands thoroughly after  
handling. Do not touch eyes.



NFPA SCALE (0-4)

|                 |   |
|-----------------|---|
| Health          | 2 |
| Flammability    | 0 |
| Physical Hazard | 0 |

HMIS RATINGS (0-4)





### Section 3 - Hazards Identification

**P301+P317:** IF SWALLOWED: Get medical help.

**P317:** Get emergency medical help.

**P305+P354+P338:** IF IN EYES: Immediately rinse with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.

**P332+P317:** If skin irritation occurs: Get medical help.

**P337+P317:** If eye irritation persists: Get medical help.

**P362+P364:** Take off contaminated clothing and wash it before reuse.

### Section 4 - First Aid Measures

#### 4.1 Description of first aid measures

General advice

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

#### If inhaled

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

#### In case of skin contact

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

#### In case of eye contact

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

#### 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





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## Section 5 - Fire-Fighting Measures

### 5.1 Extinguishing media

Suitable extinguishing media

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

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

Carbon oxides, Zinc/zinc oxides

### 5.3 Advice for firefighters

Wear self contained breathing apparatus for fire fighting if necessary.

### 5.4 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 vapours, 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.

### 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.

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

Store in dry place. Keep container tightly closed in a dry and well-ventilated place.





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## Section 8 - Exposure Controls / Personal Protection

### 8.1 Control parameters

Components with workplace control parameters

### 8.2 Exposure controls

Appropriate engineering controls

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

Personal protective equipment

#### 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).

#### 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 EU Directive 89/686/EEC and the standard EN 374 derived from it.

#### 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.

#### 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).

#### 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                  |
| Boiling point                                     | : 258.2°C at 1.013 hPa                   |
| Initial boiling point and boiling range           | : no data available                      |
| Particle size distribution                        | : 0.000876 Pa at 25°C                    |
| Sublimation Temperature                           | : no data available                      |
| Density   | : no data available                      |
| Vapour pressure                                   | : 0.001 Pa at 25°C                       |
| Vapour density                                    | : no data available                      |
| Refractive density at 20°C                        | : 1.735 g/cm <sup>3</sup>                |
| Water solubility                                  | : 434.78 g/L at 25°C                     |
| Decomposition temperature                         | : 100 °C Elimination of water of crystal |
| Viscosity   | : no data available                      |
| Auto-ignition temperature                         | : >410°C (ECHA)                          |
| Partition coefficient n-octanol/water (log value) | : -1.28 (ECHA)                           |

### 9.2 Other safety information

no data available

## 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

no data available

### 10.5 Incompatible materials

Oxidizing agents

### 10.6 Hazardous decomposition products





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## Section 10 - Stability and Reactivity

Other decomposition products - no data available

In the event of fire: see section 5

## Section 11 - Toxicological Information

### 11.1 Information on toxicological effects

#### Acute toxicity

LD50 Oral - rat - 794 mg/kg

**Remarks:** Sense Organs and Special Senses (Nose, Eye, Ear, and Taste):

**Eye:** Miosis (pupillary constriction).

**Vascular:** BP elevation not characterized in autonomic section.

**Nutritional and Gross Metabolic:** Weight loss or decreased weight gain.

#### Skin corrosion/irritation

**Skin** – rabbit

**Result:** Mild skin irritation - 24 h

#### Serious eye damage/eye irritation

**Eyes** - rabbit

**Result:** Moderate eye irritation - 24 h

#### Respiratory or skin sensitization

no data available

#### Germ cell mutagenicity

Human lymphocyte Cytogenetic analysis

#### 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.

#### Reproductive toxicity

Zinc acetate dihydrate is not classified as a reproductive toxicant, though high doses of zinc could theoretically impact reproductive health.

**Specific target organ toxicity** - Not classified for single-exposure organ toxicity; high doses may cause gastrointestinal irritation.

**Specific target organ toxicity** - repeated exposure. Not classified for repeated-exposure organ toxicity, though chronic high doses could affect liver, kidneys, and blood due to zinc accumulation.

#### Aspiration hazard

Zinc acetate dihydrate is not an aspiration hazard, as it is a solid and not easily inhaled.

**Acute toxicity:** LD50 : 663.83-2460 mg/kg (rat, oral)

239.95 mg/kg (mice,oral).

LC50 for 6.49-58.04 mg/L (inhalation)





### Section 11 - Toxicological Information

LD50 42 mg/kg bw (adult mice, other routes)  
97.8-99.6 mg/kg bw (juvenile mice, other routes).

### Section 12 - Ecological Information

#### 12.1 Toxicity

Toxicity to fish LC50– 2.46mg/L.

#### 12.2 Persistence and degradability

Zinc acetate dihydrate is moderately persistent in the environment, but it readily dissociates into zinc ions and acetate ions, which are biodegradable.

#### 12.3 Bioaccumulative potential

Zinc has a low to moderate bioaccumulation potential in aquatic organisms, but zinc is an essential element and generally regulated biologically.

#### 12.4 Mobility in soil

Zinc acetate is highly soluble in water, which allows it to be mobile in soil, though zinc ions tend to adsorb to soil particles, limiting mobility over time.

#### 12.5 Results of PBT and vPvB assessment

Zinc acetate dihydrate is not considered persistent, bioaccumulative, or toxic (PBT) nor very persistent and very bioaccumulative (vPvB) under standard regulatory criteria.

#### 12.6 Other adverse effects

High concentrations of zinc in water bodies can be toxic to aquatic life, potentially impacting aquatic ecosystems.

#### Toxicity to daphnia and other aquatic invertebrates

EC50: Daphnia magna (Water flea) - 3,72 mg/l - 48 h

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.

Toxicity to algae static test EC50 - algae - 2,1 mg/l - 72 h

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

#### Biodegradability aerobic - Exposure time 28 d

Result: 99 % - Readily biodegradable.

(OECD Test Guideline 301A)

Remarks: (anhydrous substance)







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## 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.

#### 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

SUBSTANCE IMDG : ENVIRONMENTALLY HAZARDOUS SUBSTANCE

HAZARDOUS SUBSTANCE : Environmentally hazardous substance, solid, n.o.s. (Zinc di(acetate))

IATA

### 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

### 4.6 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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