

Shanghai Aladdin Biochemical Technology Co., Ltd.  
No. 809, Chuhua Branch Road, Fengxian District, Shanghai

# SAFETY DATA SHEET

Version: v1  
Revision Date: 2025-09-26  
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## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifiers

Product name : Zinc oxide  
Product Number : Z431819  
Brand : aladdin  
CAS-No. : 1314-13-2

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

Identified uses : Laboratory chemicals, Manufacture of substances.

### 1.3 Details of the supplier of the safety data sheet

Company : Shanghai Aladdin Biochemical Tech Co., Ltd  
Address : 36 Xinjinqiao Road, Shanghai  
Telephone : 400-620-6333  
Fax : no data available

### 1.4 Emergency telephone number

Emergency Phone : 0532-83889090

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Classification under 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Based on available data, the criteria are not met

### 2.2 GHS Label elements, including precautionary statements

Pictogram



Signal word

Warning

Hazard statement(s)

H410

Very toxic to aquatic life with long lasting effects

Precautionary statement(s)

P201

Obtain special instructions before use.

P202

Do not handle until all safety precautions have been read and understood.

P260

Do not breathe dust/fume/gas/mist/vapors/spray.

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|           |                                                                            |
|-----------|----------------------------------------------------------------------------|
| 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. |
| P391      | Collect spillage.                                                          |
| P308+P311 | IF exposed or concerned: Call a POISON CENTER/doctor/...                   |
| P405      | Store locked up.                                                           |
| P501      | Dispose of contents/container to an approved waste disposal plant.         |

## 2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

Very toxic to aquatic life with long lasting effects

## SECTION 3: Composition/information on ingredients

### 3.1 Substances

|                  |                     |
|------------------|---------------------|
| Synonyms         | : no data available |
| Formula          | : ZnO               |
| Molecular weight | : 81.39             |
| CAS No.          | : 1314-13-2         |
| EC-NO.           | : 215-222-5         |

| Component         | Classification    | Concentration                                                              |
|-------------------|-------------------|----------------------------------------------------------------------------|
| <b>Zinc oxide</b> | no data available | high-purity,<br>Reagent grade,<br>≥99.9% metals<br>basis, powder, <<br>5µm |

## SECTION 4: First aid measures

### 4.1 Description of first aid measures

#### General advice

Show this material safety data sheet to the doctor in attendance.

#### If inhaled

Remove to fresh air. If not breathing, give artificial respiration. Get medical attention if symptoms occur.

#### In case of skin contact

Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.

#### In case of eye contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required. Keep eye wide open while rinsing.

#### If swallowed

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Clean mouth with water and drink afterwards plenty of water. Get medical attention if symptoms occur.

#### **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**

Water, Foam, Carbon dioxide (CO<sub>2</sub>), Dry powder

**Unsuitable extinguishing media**

no data available

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

Zinc/Zinc oxide Not flammable. Surrounding fire sources may cause the release of hazardous vapors

#### **5.3 Advice for firefighters**

wear self-contained breathing and full protective gear.

#### **5.4 Further information**

Use water spray to cool unopened containers.

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### **SECTION 6: Accidental release measures**

#### **6.1 Personal precautions, protective equipment and emergency procedures**

Ensure adequate ventilation. Use personal protective equipment as required.

#### **6.2 Environmental precautions**

Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system. Prevent product from entering drains. Local authorities should be advised if significant spillages cannot be contained.

#### **6.3 Methods and materials for containment and cleaning up**

Sweep up and shovel into suitable containers for disposal. Keep in suitable, closed Up containers for disposal.

#### **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**

Wear personal protective equipment/face protection. Ensure adequate ventilation. Avoid dust formation. Avoid contact with skin, eyes or clothing. Avoid ingestion and inhalation.

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## 7.2 Conditions for safe storage, including any incompatibilities

Keep containers tightly closed in a dry, cool and well-ventilated place.

## 7.3 Specific end use(s)

no data available

# SECTION 8: Exposure controls/personal protection

## 8.1 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

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN166(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 Regulation (EU)2016/425 and the standard EN 374 derived from it.

#### Body Protection

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

#### Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a fullface particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN(EU).

#### Control of environmental exposure

If safety requires, prevent further leakage or spillage. Do not let the product enter the sewer.

# SECTION 9: Physical and chemical properties

## 9.1 Information on basic physical and chemical properties

|                    |                                 |
|--------------------|---------------------------------|
| a) Appearance      | form: Powder Solid color: White |
| b) Odour           | no data available               |
| c) Odour Threshold | no data available               |

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|                                                 |                   |
|-------------------------------------------------|-------------------|
| d) pH                                           | no data available |
| e) Melting point/freezing point                 | 1975°C            |
| f) Initial boiling point and boiling range      | no data available |
| g) Flash point                                  | no data available |
| h) Evaporation rate                             | no data available |
| i) Flammability (solid, gas)                    | no data available |
| j) Upper/lower flammability or explosive limits | no data available |
| k) Vapour pressure                              | no data available |
| l) Vapour density                               | no data available |
| m) Relative density                             | no data available |
| n) Water solubility                             | no data available |
| o) Partition coefficient: n-octanol/water       | no data available |
| p) Auto-ignition temperature                    | no data available |
| q) Decomposition temperature                    | no data available |
| r) Viscosity                                    | no data available |
| s) Explosive properties N                       | no data available |
| t) Oxidizing properties N                       | no data available |

## 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

Stable under recommended storage conditions.

### 10.3 Possibility of hazardous reactions

no data available

### 10.4 Conditions to avoid

Avoid dust formation.

### 10.5 Incompatible materials

Strong acids

### 10.6 Hazardous decomposition products

no data available

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## SECTION 11: Toxicological information

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## 11.1 Information on toxicological effects

### Acute toxicity

LD50 Oral - Rat - Male and Female ->2000 mg/kg

(OECD Testing Guideline 423)

LC50 inhalation - rats - male and female -4 hours ->1.79 mg/l - dust/smoke

(US-EPA)

LD50 transdermal - rat - male and female ->2000 mg/kg

(OECD Testing Guideline 402)

### Skin corrosion/irritation

Skin - Reconstructing the Human Epidermal (RhE) Result: No skin irritation -1 hour (OECD Testing Guidelines 431)

### Serious eye damage/eye irritation

Eyes - Cow Horn Membrane Result: No eye irritation -4 hours (OECD Testing Guideline 437)

### Respiratory or skin sensitisation

Maximum Response Test - Guinea Pig Result: Negative (OECD Testing Guideline 406)

### Germ cell mutagenicity

Test type: Ames test Testing system: Escherichia coli/Salmonella typhimurium Metabolic activation: with or without metabolic activation effect method: OECD Testing Guidelines 471 Result: Negative Test type: In vitro mammalian cell gene mutation assay Testing System: Mouse Lymphoma Cells Metabolic activation: with or without metabolic activation effect method: OECD Testing Guidelines 476 Result: Positive results were obtained in some in vitro experiments. Test type: In vitro chromosomal aberration test Testing System: Chinese Hamster Lung Cells Metabolic activation: with or without metabolic activation effect method: OECD Testing Guideline 473 Result: Negative Test type: In vitro chromosomal aberration test Testing System: Human Lymphocytes Metabolic activation: No metabolic activation Result: Positive remarks: (ECHA) Test type: Micronucleus test Testing System: Human Epithelioid Cells Metabolic activation: No metabolic activation method: OECD Testing Guidelines 487 Result: Negative Test type: In vivo micronucleus test Species: Mouse Cell type: Red blood cells (erythrocytes) Route of infection: Intraperitoneal method: OECD Testing Guidelines 474 Result: Negative

### 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

### Additional Information

Repeated toxicity - rats - male and female - oral -13 weeks - level of no observed harmful effects -31.52 mg/kg

Remarks: (Compared with similar products)

Repeated toxicity - rat - male - inhalation - March

Repeated toxicity - rat - male and female - transdermal -28 days - lowest level of observed harmful effects -75 mg/kg

Registration of Toxic Effects of Chemical Substances: ZH4810000

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Zinc oxide dust or smoke can irritate the respiratory tract. Long term skin contact leading to severe dermatitis is called an oxide rash. Exposure to high levels of dust or smoke  
Mist can cause a metallic taste, significant thirst, coughing, fatigue, weakness, muscle pain, and nausea, followed by fever and cold war. Serious over connection  
Touching can cause bronchitis or pneumonia, and the skin may turn blue., Long term or frequent exposure can lead to reversible liver enzyme abnormalities., Diarrhea  
To our knowledge, the chemical, physical, and toxic properties of this substance have not been fully studied.  
The following data applies to general zinc compounds: they can only be absorbed in trace amounts in the digestive tract  
It has a converging effect on mucous membranes Inhalation in large quantities can cause metal to smoke and heat up  
Operate in accordance with good industrial hygiene and safety regulations.

## SECTION 12: Ecological information

### 12.1 Toxicity

Semi static toxicity test on fish LC50- Danio rerio (zebrafish) -2.525 mg/l -96 h

remarks: (ECHA)

Static toxicity test on water fleas and other aquatic invertebrates EC50- Daphnia magna -1 mg/l -48 h  
(OECD Testing Guidelines 202)

Static toxicity test on algae NOEC - Pseudokirchneriella subcapitata -0.024 mg/l-  
72 h

(OECD Testing Guidelines 201)

Static toxicity test for bacteria EC50- Activated sludge ->1000 mg/l -3 h  
(OECD Testing Guideline 209)

### 12.2 Persistence and degradability

no data available

### 12.3 Bioaccumulative potential

no data available

### 12.4 Mobility in soil

no data available

### 12.5 Results of PBT and vPvB assessment

no data available

### 12.6 Other adverse effects

no data available

## SECTION 13:

### 13.1 Disposal considerations

Product

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Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

**Contaminated packaging**

Dispose of as unused product.

## SECTION 14: Transport information

### DOT (US)

|                                                                                                         |                                            |                                             |
|---------------------------------------------------------------------------------------------------------|--------------------------------------------|---------------------------------------------|
| UN number: UN3077                                                                                       | Packing group: III                         | Class: 9                                    |
| Proper shipping name: Solid substances harmful to the environment, not otherwise specified (zinc oxide) | Reportable Quantity(RQ): no data available | Poison Inhalation Hazard: no data available |
| Environmental Hazards: yes                                                                              |                                            |                                             |

### IMDG

|                                                                                                         |                    |                           |
|---------------------------------------------------------------------------------------------------------|--------------------|---------------------------|
| UN number: UN3077                                                                                       | Packing group: III | EMS-No: no data available |
| Proper shipping name: Solid substances harmful to the environment, not otherwise specified (zinc oxide) |                    |                           |

### IATA

|                                                                                                         |                    |          |
|---------------------------------------------------------------------------------------------------------|--------------------|----------|
| UN number: UN3077                                                                                       | Packing group: III | Class: 9 |
| Proper shipping name: Solid substances harmful to the environment, not otherwise specified (zinc oxide) |                    |          |

## SECTION 15: Regulatory information

Please note that waste disposal should also meet local regulations. If applicable, the chemical meets the requirements of the Regulations on the Safety Management of Hazardous Chemicals (adopted by the State Council on December 4, 2013).

## SECTION 16: Other information

### Further information

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