



Yung Chyang Chemical Industries Co.,Ltd.

Safety Data Sheet (Zinc Oxide SDS)

Section 1: Chemical Product and Company Identification

Product Name: Zinc Oxide(ZnO)

Product Form: Substance

Formula: ZnO CAS-No.: 1314-13-2

Synonyms: Zinc White; Flowers of Zinc; Chinese White

Manufacture/Supplier: Yung Chyang Chemical Industries Co.,Ltd.

Address:43,Kuan Yeh N,Rd.Ping Chen District, ,Taoyuan City ,Taiwan(zip code:32455)

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Section 2: Hazards Identification

2.1 GHS classification:

Acute hazards to the aquatic environment, category 1

Chronic hazards to the aquatic environment, category 1



2.2 Symbol: Exclamation mark health hazard.

2.3 Signal word: Warning

2.4 Hazard statements:

- (1) Acute respiratory irritant.
- (2) Mechanical irritation to skin and eyes.
- (3) Physical effects on aquatic and terrestrial organisms.
- (4) Zinc oxide is not a NTP/IARC carcinogen.
- (5) Signs & symptoms of exposure: Dry throat, cough, itching skin.

2.5 Precautionary statements:

- (1) If media advice is needed, have product container or label at hand.
- (2) Keep out of reach of children.
- (3) Read label before use.
- (4) Avoid release to the environment.
- (5) Collect spillage.
- (6) Dispose of contents and container to an approved waste disposal plant.

Section 3: Ingredients Identification

3.1 Product Name : Zinc Oxide(ZnO)

3.2 Synonyms : Zinc white, Chinese white. Flower of zinc, Zinc monoxide, White zinc, ZnO.

3.3 CAS No. : 1314-13-2

3.4 Component (%Range) : 99.5-100



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Section 4 : First Aid Measures

- 4.1 First aid : Remove person from exposure.
- 4.2 Inhalation : Move to fresh air. Consult physician if acute symptoms persist.
- 4.3 Skin contact : Wash with soap and water. Restore oil with lotion if necessary.
- 4.4 Ingestion : Rinse mouth. Do NOT induce vomiting.
- 4.5 Eye contact : Rinse cautiously with water for at least 15 minutes.
Consult physician if acute symptoms persist.
- 4.6 Protection of first responder : Wear suitable respirator if bulk dust conditions exceed Permissible exposure levels listed in section 8. Wear additional protection for personal comfort as conditions warrant.

Section 5 : Fire, Fighting Measures

5.1 Extinguishing media :

Use extinguishing media based on surrounding materials
(CO₂ Foam, dry powder or water).

Avoid release of fire control water to environment.

5.2 Advice for firefighters :

Protective equipment: Wear protective eyewear, gloves, and clothing.

Additional information (precaution): Avoid inhaling gases, fumes, dust, mist, vapor, and aerosols. Avoid contact with skin, eyes, and clothing. Avoid generating dust.

5.3 Flash point : Product is a powder form, is non-combustible, and will not burn.

In case of fire or smouldering fire wear respiratory protection equipment.

Section 6 : Accidental release measures

6.1 Person : Released safety precautions. Wear protective clothing.

6.2 Small spill : Fill into labeled, sealable containers.

6.3 Large spill :

Use a shovel to put the material into a convenient waste disposal container.

Spills not mixed with other chemicals may be recyclable-contact Yung Chyang Chemical Co. for further information. See section 13 for disposal information.



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Section 7 : Handling and Storage

7.1 Precautions for safe handling:

Avoid contact with skin, eyes, and clothing. Follow good hygiene procedures when Handling chemical materials. Follow proper disposal methods. Wash hands after handling. Avoid contact with skin and eyes. Handle in accordance with good industrial hygiene and safety practice. Do not eat, drink, smoke, or use personal products when handling chemical substance. Avoid generating dust.

7.2 Conditions for safe storage, including any incompatibilities:

Store in a cool location. Keep away from food and beverages. Protect from freezing and Physical damage. Provide ventilation for containers. Keep container tightly sealed. Store away from incompatible materials.

Section 8 : Exposure Controls/Personal Protection

8.1 Engineering controls : Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limit.

8.2 Respiratory protection : Use NIOSH approved dust filter respirator.

8.3 Personal protection : Safety glasses, protective gloves, protective clothing.

OSHA PEL (United States, 2/2013).

TWA: 5 mg/m³ 8 hours. Form: Fume

TWA: 5 mg/m³ 8 hours. Form: Respirable fraction

TWA: 15 mg/m³ 8 hours. Form: Total dust

STEL: 10 mg/m³ 15 minutes. Form: Respirable fraction

8.4 Exposure limits : NIOSH REL (United States, 10/2013).

CEIL: 15 mg/m³ Form: Dust

TWA: 5 mg/m³ 10 hours. Form: Dust & fumes

ACGIH TLV (United States, 4/2014).

STEL: 10 mg/m³ 15 minutes. Form: Fume

TWA: 2 mg/m³ 8 hours. Form: Respirable fraction



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Section 9 : Physical and Chemical Properties

Appearance : Powdered solid.	Color : White or Yellowish white.
Odor, smell : Odorless.	Specific gravity : 5.607 g/cm ³ .
Boiling point : Not applicable.	Vapor pressure : @1500C=12mmHg.
Melting point : 1,975°C	Evaporation rate : N/A(Butyl Acetate).
Molecular weight : 81.38	Solubility in water : Insoluble(negligible,<2mg/l)
Volatile : 0.3%(nominal H ₂ O)	Soluble : In base and acids.
Oxidation Qualities : Not applicable.	Fire qualities : Will not burn.
PH : 7.0-7.5(5%w/v).	Vapor density : Not applicable.
Typical particle size : ≒ 1 micron.	Explosive : Not explosive.

Section 10 : Stability and Reactivity

10.1 Stability : Stable under normal conditions.

10.2 Hazardous polymerization : Will not occur.

10.3 Corrosive : Non-corrosive in presence of iron, glasses, plastic.

10.4 Reactivity or material to avoid :

- (1) Heated Magnesium(Mg).
- (2) Chlorinated rubber above 215°C.
- (3) Reacts with strong acids(HCl,H₂SO₄,HF,~).
- (4) Reacts violently with linseed oil.
- (5) Decompose in strong heated resins and polymer.



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Section 11 : Toxicological Information

11.1 Routes of entry : Dermal contact, inhalation, ingestion.

11.2 Toxicity to animals : Acute oral toxicity(LD₅₀) : 7,950 mg/kg 【mouse】 .

: Acute inhalation toxicity(LC₅₀) : > 5.7 mg.(rat.4 hrs.)

11.3 Chronic effects on humans : MUTAGENIC EFFECTS : Mutagenic for mammalian somatic cells. Mutagenic for bacteria and/or yeast.

11.4 Other toxic effects on humans :

(1) Hazardous in case of inhalation.

(2) Slightly hazardous in case of skin contact(irritant),of Ingestion.

11.5 Special remarks on toxicity to animals : Not available.

11.6 Special remarks on chronic effects on humans :

(1) May cause adverse reproductive effects based on animal data.

No human data found at this time.

(2) May affect genetic material(mutagenic).

11.7 Special remarks on other toxic effects on humans :

Acute potential health effects :

(1) May cause mild skin irritation.

(2) May cause mechanical eye irritation and conjunctivitis.

(3) May cause mechanical irritation of the respiratory tract.

A few sources claim that finely divided zinc.

Section 12 : Ecological Information

Ecotoxicity : Not available.

BOD and COD : Not available.

Biological toxic : LC₅₀(Fish) : 2,246,000 µg/L/96H(Pimephales promelas).

Prevent entry into drains, water or soil.

Environmental effect : No data observed.

Section 13 : Disposal Considerations

Recycle : Material may be recyclable, contact Yung Chyang .

Waste disposed : Waste must be disposed of in accordance with local environmental control regulations.



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Section 14 : Transport Information

The shipping description(s) stated herein were prepared in accordance with certain assumptions at the time the SDS was authored, and can vary based on a number of variables that may or may not have been known at the time the SDS was issued.

* When shipped in accordance with US DOT 49 CFR part 171.4(c) and other appropriate sections/provisions this material is not designated as a marine pollutant when transported by road or rail.

* When shipped in accordance with the Canada Transport of Dangerous Goods Regulations part 1.45.1 another appropriate sections/provisions this material is not designated as a marine pollutant when transported by road or rail.

Transportation classification	DOT	TDG	IMDG	IATA
Identification Number	UN3077	UN3077	UN3077	UN3077
Proper Shipping Name	ENVIRONMENTALLY HAZARDOUS SUBSTANCES, SOLID, N.O.S. CONTAINS ZINC OXIDE	ENVIRONMENTALLY HAZARDOUS SUBSTANCES, SOLID, N.O.S. CONTAINS ZINC OXIDE	ENVIRONMENTALLY HAZARDOUS SUBSTANCES, SOLID, N.O.S. CONTAINS ZINC OXIDE	ENVIRONMENTALLY HAZARDOUS SUBSTANCES, SOLID, N.O.S. CONTAINS ZINC OXIDE
Transport Hazard	9	9	9	9
Class(es)				
Packing Group	III	III	III	III
Environmental Hazards	Marine Pollutant : Yes	Marine Pollutant : Yes	Marine Pollutant : Yes	Marine Pollutant : N/A
Emergency Response	ERG Number : 171	ERAP Index: Not applicable	EMS: F-A, S-F	ERG code (IATA): 9L
Additional Information	Not applicable	Not applicable	Not applicable	Not applicable



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Section 15 : Regulatory Information

United States (USA)

SARA Section 311/312 (Specific toxic chemical listings):

SARA Section 313 (Specific toxic chemical listings):

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RCRA (hazardous waste code):

None of the ingredients is listed.

TSCA (Toxic Substances Control Act):

All ingredients are listed.

CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act)

None of the ingredients is listed.

Proposition 65 (California):

Chemicals known to cause cancer:

None of the ingredients is listed.

Chemicals known to cause reproductive toxicity for females:

None of the ingredients is listed.

Chemicals known to cause reproductive toxicity for males:

None of the ingredients is listed.

Chemicals known to cause developmental toxicity:

None of the ingredients is listed.

Canada

Canadian Domestic Substances List (DSL):

All ingredients are listed.

Canadian NPRI ingredient Disclosure list (limit 0.1%)

None of the ingredients is listed.

Canadian NPRI ingredient Disclosure list (limit 1%)

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Section 16 : Other Information

HIMIS(U.S.A.)Hazard rating :

		<u>Rating Definitions</u>	
Health	1		
Flammability	0	0=Minimal	1=Slight
Reactivity	0	2=Moderate	3=Serious
Personal protection	E	4=Severe	

National fire protection association(U.S.A.)

Health	1
Flammability	0
Reactivity	0



Personal protective index : E=Gloves+ Mask+ Goggles.

Protective equipment : Gloves.

Lab coat.

Dust respirator.

Safety glasses

This product has been classified in accordance with hazard criteria of the Controlled Products Regulations and the SDS contains all the information required by the Controlled Products Regulations. Note: The responsibility to provide a safe workplace remains with the user. The user should consider the health hazards and safety information contained herein as a guide and should take those precautions required in an individual operation to instruct employees and develop work practice procedures for a safe work environment.

The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by the use of this material. It is the responsibility of the user to comply with all applicable laws and regulations applicable to this material.

According to 29CFR1910/1200

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