Product Name	Zinc oxide

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identification:

Product Description: Zinc oxide

Synonyms: Chinese white; Zinc white; C.I. Pigment White 4

CAS-No: 1314-13-2

EC-No.: 215-222-5

Molecular Formula: ZnO

REACH Registration No:

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

Recommended Use: Laboratory chemicals, Manufacture of substances, used as a pharma excipient.

1.3 Details of the supplier of the safety data sheet:

- **Company** — **Finar Limited**
  184-186/P, Chacharwadi Vasna,
  Sarkhej-Bavla Highway,
  Ta.: Sanand, Dist.: Ahmedabad-382110, Gujarat, India.
  Web: www.finarchemicals.com
- **E-Mail Address** — safety.finar@actylis.com; info.finar@actylis.com

1.4 Emergency Telephone Number:

- For Emergency contact on: +91 - 2717 - 616 717

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture:

Classification according to Regulation (EC) No 1272/2008

Short-term (acute) aquatic hazard (Category 1), H400

Long-term (chronic) aquatic hazard (Category 1), H410

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 Label Elements:

Labeling according Regulation (EC) No 1272/2008

Pictogram

Signal word: Warning

Hazard statement(s)

H410 Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)

P273 Avoid release to the environment.

P391 Collect spillage.

P501 Dispose of contents/ container to an approved waste disposal plant.

Supplemental Hazard Statement

None

Reduced labelling (≤125 ml)

Pictogram

Signal word: Warning

Hazard statement(s)

None

Precautionary statement(s)

None

Supplemental Hazard Statement

None

2.3 Other Hazards:

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.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances: Zinc oxide

3.2 Mixtures:

Component	CAS-No	EC-No.	Weight %
Zinc oxide	1314-13-2	215-222-5	>95 %

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**

  Remove to fresh air. If breathing is difficult, give oxygen. Get medical attention if symptoms occur.
- **If case of skin contact**

  Wash off immediately with plenty of water for at least 15 minutes.

  Get medical attention if symptoms occur.
- **In case of eye contact**

  Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.

  Get medical attention if symptoms occur.
- **If swallowed**

  Do NOT induce vomiting. 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

SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing media:

Suitable Extinguishing Media-

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media-

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

5.2 Special hazards arising from the substance or mixture:

Zinc/zinc oxides

Not combustible. Ambient fire may liberate hazardous vapours.

5.3 Advice for firefighters:

In the event of fire, wear self-contained breathing apparatus.

5.4 Further Information:

Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures:

Advice for non-emergency personnel: Avoid inhalation of dusts. Evacuate the danger area, observe emergency procedures, consult an expert. For personal protection see section 8.

6.2 Environmental precautions:

Do not let product enter drains.

6.3 Methods and material for containment and cleaning up:

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up dry. Dispose of properly. Clean up affected area. Avoid generation of dusts.

6.4 Reference to other sections:

For disposal see Sections 13.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling:

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

7.2 Conditions for safe storage, including any incompatibilities:

Storage conditions

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

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:

Ingredients with workplace control parameters

8.2 Exposure Controls:

Personal Protective Equipment:

- **Eye & Face Protection-**

  Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses

- **Hand 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

  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).

  Splash contact-

  Material: Nitrile rubber

  Minimum layer thickness: 0.11 mm

  Break through time: 480 min

  Material tested: KCL 741 Dermatril® L

- **Respiratory Protection-**

  Required when dusts are generated.

  Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

  Recommended Filter type: Filter type P1

  The entrepeneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are

carried out according to the instructions of the producer.

These measures have to be properly documented.

- **Environmental Exposure Controls-**

Do not let product enter drains.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties:

- **Appearance:** White / off white
- **Physical State:** Powder
- **Odor:** Odorless
- **Odor Threshold:** Not applicable
- **pH:** 6.72
- **Melting Point:** 1975 °C
- **Initial Boiling Point/Range:** No data available
- **Flash Point:** No data available
- **Evaporation Rate:** No data available
- **Lower Explosion Limit:** No data available
- **Upper Explosion Limit:** No data available
- **Vapor Pressure:** No data available
- **Density:** 5.68 g/cm3 at 22 °C
- **Relative Density:** 5.68 at 22 °C
- **Water Solubility:** 0.0029 g/l at 20 °C
- **Partition Co-efficient: n-octanol/Water:** No data available
- **Auto-Ignition Temperature:** No data available
- **Decomposition Temperature:** No data available
- **Viscosity, Dynamic:** No data available
- **Viscosity, Kinematic:** No data available
- **Water/Oil Dist. Co eff.:** No data available

9.2 Other information:

- **Molecular Formula:** ZnO
- **Molecular Weight:** 81.38 g/mol

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity:

No data available

10.2 Chemical stability:

The product is chemically stable under standard ambient conditions (room temperature).

10.3 Possibility of hazardous reactions:

Violent reactions possible with:

Hydrogen peroxide

Magnesium

10.4 Conditions to avoid:

Avoid dust formation. Incompatible products.

10.5 Incompatible materials:

Strong acids

10.6 Hazardous decomposition products:

In the event of fire: see section 5

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects:

Acute Toxicity

LD50 Oral - Rat - male and female - > 2.000 mg/kg

(OECD Test Guideline 423)

LC50 Inhalation - Rat - male and female - 4 h - > 1,79 mg/l

(US-EPA)

LD50 Dermal - Rat - male and female - > 2.000 mg/kg

(OECD Test Guideline 402)

Skin corrosion / irritation

Skin - reconstructed human epidermis (RhE)

Result: No skin irritation - 1 h

(OECD Test Guideline 431)

Serious eye damage / Eye irritation

Eyes - Bovine cornea

Result: No eye irritation - 4 h

(OECD Test Guideline 437)

Respiratory or skin Sensitisation

Maximization Test - Guinea pig

Result: negative

(OECD Test Guideline 406)

Germ cell mutagenicity

Test Type: Ames test

Test system: Escherichia coli/Salmonella typhimurium

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 471

Result: negative

Test Type: In vitro mammalian cell gene mutation test

Test system: mouse lymphoma cells

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 476

Result: Positive results were obtained in some in vitro tests.

Test Type: Chromosome aberration test in vitro

Test system: Chinese hamster lung cells

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 473

Result: negative

Test Type: Chromosome aberration test in vitro

Test system: Human lymphocytes

Metabolic activation: without metabolic activation

Result: positive

Remarks: (ECHA)

Test Type: Micronucleus test

Test system: Human epithelioid cells

Metabolic activation: without metabolic activation

Method: OECD Test Guideline 487

Result: negative

Test Type: In vivo micronucleus test

Species: Mouse

Cell type: Red blood cells (erythrocytes)

Application Route: Intraperitoneal

Method: OECD Test Guideline 474

Result: negative

Carcinogenicity

No data available

Reproductive toxicity

No data available

Teratogenicity

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

11.2 Further Information:

Repeated dose toxicity - Rat - male and female - Oral - 13 Weeks - NOAEL (No observed adverse effect level) – 31.52 mg/kg

Remarks: (in analogy to similar products)

Repeated dose toxicity - Rat - male - Inhalation - 3 Months

Repeated dose toxicity - Rat - male and female - Dermal - 28 d - LOAEL (Lowest observed adverse effect level) - 75 mg/kg

RTECS: ZH4810000

Zinc oxide dust or fume can irritate the respiratory tract. Prolonged skin contact can produce a severe dermatitis called oxide pox. Exposure to high levels of dust or fume can cause metallic taste, marked thirst, coughing, fatigue, weakness, muscular pain, and nausea followed by fever and chills. Severe overexposure may result in bronchitis or pneumonia with a bluish tint to the skin., prolonged or repeated exposure can cause:, Reversible liver enzyme abnormalities., Diarrhea

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

The following applies to zinc compounds in general: only slightly absorbable via the gastrointestinal tract. Adstringent effect on mucous membranes. Metal-fume fever after inhalation of large quantities.

Handle in accordance with good industrial hygiene and safety practice.

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity:

Toxicity to fish

Semi-static test LC50 - Danio rerio (zebra fish) – 2.525 mg/l - 96 h

Remarks: (ECHA)

Toxicity to daphnia and other aquatic invertebrates

Static test EC50 - Daphnia magna (Water flea) - 1 mg/l - 48 h

(OECD Test Guideline 202)

Toxicity to algae

Static test NOEC - Pseudokirchneriella subcapitata (microalgae) – 0.024 mg/l - 72 h

(OECD Test Guideline 201)

Toxicity to bacteria

Static test EC50 - activated sludge - > 1.000 mg/l - 3 h

(OECD Test Guideline 209)

12.2 Persistence and degradability:

The methods for determining the biological degradability are not applicable to inorganic substances.

12.3 Bioaccumulate potential:

No data available

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.

12.6 Other adverse effects:

No data available

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods:

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.

SECTION 14: TRANSPORT INFORMATION

	Land transport (ADR/RID)	Air transport (IATA)	Sea transport (IMDG)
14.1 UN number	UN 3077		
14.2 Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc oxide)		
14.3 Class	9		
14.4 Packing group	III		
14.5 Environmentally Hazardous	Yes		
14.6 Special precautions for user	-		

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Further information
EHS-Mark required (ADR 2.2.9.1.10, IMDG code 2.10.3) for single packagings and combination packagings containing inner packagings with Dangerous Goods > 5L for liquids or > 5kg for solids.

SECTION 15: REGULATORY INFORMATION

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

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

National legislation

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.

: ENVIRONMENTAL HAZARDS

Other regulations

Take note of Dir 94/33/EC on the protection of young people at work.

15.2 Chemical safety assessment:

For this product a chemical safety assessment was not carried out.

Product Name	Zinc oxide

SECTION 16: OTHER INFORMATION

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

H400 Very toxic to aquatic life.

H410 Very toxic to aquatic life with long lasting effects.

Training advice

Provide adequate information, instruction and training for operators.

References: Not available

Created: 08/12/2021

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Disclaimer:

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