

## ZINC OXIDE – SAFETY DATA SHEET

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

#### PRODUCT IDENTIFIER

Product Name	Zinc Oxide
INCI Name	Zinc Oxide
CAS Number	1314-13-2


#### DETAILS OF THE SUPPLIER OF THE SAFETY DATA SHEET

Registered distributor company name	Pure Ingredients	Pure Nature
Address	626A Rosebank Road, Avondale 1026	626A Rosebank Road, Avondale 1026
Telephone	+64 9 813 5619	+64 9 813 9412
Website	www.pureingredients.co.nz	www.purenature.co.nz
Email	compliance@pureingredients.co.nz	info@purenature.co.nz

#### EMERGENCY TELEPHONE NUMBER

Association / Organisation	0800 CHEMCALL / 0800 243 622 (24hr)
Emergency telephone numbers	111
Other emergency telephone numbers	0800 764 766

### SECTION 2 HAZARDS IDENTIFICATION

Hazard Classification	Hazardous to aquatic environment, acute Category 1 Hazardous to aquatic environment, chronic Category 3	9.1A 9.1C
Hazard Nature	This product is classified as <b>HAZARDOUS</b> under HSNO and GHS criteria.	
Pictogram(s)		
Signal Word	<b>WARNING</b>	
Hazard Statement(s)	Very toxic to aquatic life. Harmful to aquatic life with long lasting effects.	
Prevention Statement(s)	Avoid release to the environment.	
Response Statement(s)	Collect spillage.	
Storage Statement(s)	Nil	
Disposal Statement(s)	Dispose of contents/container in accordance with local/regional/national/international regulation.	

### SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

% [volume/weight]	INCI Name	CAS No.
95 – 100	Zinc Oxide	1314-13-2
≤ 0.05	Lead (PbO) - impurity	
≤ 0.01	Cadmium (CdO) - impurity	

### SECTION 4 FIRST AID MEASURES

**Inhalation:** Move the victim to fresh air and keep at rest in a position comfortable for breathing. Begin artificial respiration if breathing has stopped. Seek medical attention.

**Skin/hair contact:** If skin contact occurs, remove contaminated clothing and wash skin with soap and water. If skin irritation occurs, get medical advice. Launder contaminated clothing before re-use.

**Eye contact:** Hold eyelids apart and flush the eye with running water for at least 15 minutes. Seek medical attention if irritation persists.

**Ingestion:** If swallowed, do not induce vomiting. Give a glass of water to drink, if conscious. Never give anything by mouth to an unconscious person. Begin artificial respiration if the victim is not breathing. Use mouth to nose rather than mouth to mouth. Seek medical attention.

**Most important symptoms and effects:**  
Acute: Dry cough, headache, throat irritation  
Delayed: No delayed symptoms or effects expected

**First aid facilities:** Provide eye baths and safety showers.

**Medical attention:** Bad cough, headache, and/or nausea. Move effected individual to fresh air.

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### SECTION 5 FIREFIGHTING MEASURES

Shut off product that may 'fuel' a fire if safe to do so. Allow trained personnel to attend a fire in progress, providing firefighters with this Safety Data Sheet. Prevent extinguishing media from escaping to drains and waterways.

**Suitable extinguishing media:** Dry chemical or foam. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Do not use high volume water jet.

**Specific hazards arising from the material:** Contaminated fire extinguishing water must not be discharged into drains.

**Hazards from combustion products:** Decomposition products may include Zinc Oxide fumes at high temperatures.

**Fire-fighting precautions:** No specific precautions advised.

**Special protective equipment:** Full protective clothing and self-contained breathing apparatus.

### SECTION 6 ACCIDENTAL RELEASE MEASURES

**Emergency procedures:** Prevent material from escaping to drains and waterways. Contain leaking packaging in a containment vessel. Prevent vapours from building up in confined areas. Ensure that drain valves are closed at all times. Clean up and report spills immediately.

**Personal precautions:** Avoid breathing dust.

**Environmental precautions:** Prevent contamination of soil, drains, and surface water.

**Methods and materials for containment:** Avoid dry sweeping or other methods which raise dust. Vacuum or wet-sweep and place into a suitable closable, labelled container for disposal. Dispose of waste via licensed waste disposal contractor.

**Major land spill:**

- Eliminate sources of ignition.
- Warn occupants of downwind areas of possible fire/explosion or toxicity hazard.
- Prevent product from entering sewers, watercourses, or low-lying areas.
- Keep the public away from the area.
- Shut off the source of the spill if possible and safe to do so.
- Advise authorities if substance has entered a watercourse or sewer or has contaminated soil or vegetation.
- Take measures to minimise the effect on ground water.
- Contain any spilled liquid with sand or earth.
- Recover liquid spills by pumping – use explosion proof pump or hand pump – or with a suitable absorbent material.
- Recover solid spills by mechanical collection methods; cover and prevent dusts or particles from spreading – consider wetting the product down, without diluting it – and vacuum or sweep up.
- Consult an expert on disposal of recovered material and ensure conformity to local disposal regulations.

**Major water spill:**

- Eliminate any sources of ignition.
- Warn occupants and shipping in downwind areas of possible fire/explosion or toxicity hazard.
- Notify the port or relevant authority and keep the public away from the area.
- Shut off the source of the spill if possible and safe to do so.
- Confine the spill if possible.
- Remove the product from the surface by skimming or with suitable absorbent material.
- Consult an expert on disposal of recovered material and ensure conformity to local disposal regulations.

### SECTION 7 HANDLING AND STORAGE

**Precautions for safe handling:** This product should be used in accordance with good industrial safety practices and industrial hygiene standards and all local, state, federal, and international regulations. Avoid creating airborne dust. Ensure adequate exhaust ventilation. Workers who handle material should wear gloves and thoroughly wash hands/forearms after exposure.

**Conditions for safe storage:** Store under ambient conditions and keep packaging free from high moisture areas in a wellventilated space sealed tightly in the original containers. Once original containers are opened, all product must be used or remaining product placed in tightly sealed containers. Protect containers from damage and repair if damage occurs.

### SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

#### EXPOSURE CONTROLS

**Exposure Standards:**

New Zealand: Workplace Exposure Standards and Biological Exposure Indices, Edition 13: April 2022

TWA:	Zinc oxide: 2 mg/m <sup>3</sup> (respirable dust 0.1 mg/m <sup>3</sup> ) Lead, inorganic dusts and fumes, as Pb: 0.05 mg/m <sup>3</sup> Cadmium and compounds, as Cd: 0.004 mg/m <sup>3</sup> (respirable dust)
STEL:	Zinc oxide: 5 mg/m <sup>3</sup> (respirable dust 0.5 mg/m <sup>3</sup> )

Time weighted average (TWA) – highest allowable average airborne concentration of a particular substance when calculated over an eight-hour working day. Short-term exposure limit (STEL) – maximum allowable exposure concentration for a substance during any 15-minute period in the working day.

**Biological Limit Values:**

Lead (inorganic) BEI: Lead in blood: 10 g/dL (0.48 mol/L) for males and for females not of reproductive capacity, pregnant, or breastfeeding.  
Cadmium BEI: Cadmium in urine: 2 ug/g creatinine.

**Engineering Controls:** Use local exhaust ventilation to pro-actively reduce dust levels

#### PERSONAL PROTECTION

**Respiratory protection:** If exposure levels exceed limits, respiratory protection approved for the work being performed must be worn. Recommended filter type: Dust mask/particle filter.

**Eye protection:** Always wear approved protective eyewear if there is a potential for dust being created while handling the material.

**Skin/body protection:** Wear normal chemical work clothing and protective gloves.

**SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES**

Appearance	White solid	Vapour pressure	Not applicable
Odour	Odourless	Vapour density	Not applicable
Odour threshold	Not available	Relative density	5.68 g/ml
pH	Neutral	Solubility	Insoluble in water; soluble in acids & bases
Melting/freezing point	1975°C	Partition coefficient	Not available
Boiling point & range	Not available	Auto-ignition temperature	Not available
Flash point	Not available	Decomposition temperature	Not available
Flammability	Not flammable	Kinematic viscosity	Not applicable
Upper/lower flammability	Not available	Particle characteristics	Typical particle size: d50 ≈1µm

**SECTION 10 STABILITY AND REACTIVITY**

**Reactivity:** Stable under normal, dry conditions.  
**Chemical stability:** Stable at room temperature and pressure.  
**Conditions to avoid:** Sources of heat and ignition, open flames.  
**Incompatible materials:** Heated magnesium. Chlorinated rubbers above 215°C.  
**Hazardous decomposition products:** Potential for ZnO fumes at elevated temperatures.  
**Hazardous reactions:** None.  
**Hazardous polymerisation:** Will not occur.

**SECTION 11 TOXICOLOGICAL INFORMATION**

**Acute Effects:**  
Ingestion – No known significant effects or critical hazards.  
Inhalation – Exposure to high airborne concentrations may cause irritation of the respiratory tract.  
Skin contact – No data is available to indicate skin irritation. The substance has no acute dermal toxicity. This substance does not cause skin sensitisation.  
Eye contact – Exposure to high airborne concentrations may cause irritation to eyes.

**Chronic Effects:**  
Genotoxicity in vitro – Species: Bacteria (OECD Test Guideline 471). Result: negative.  
Genotoxicity in vivo – Species: Mammalian-Animal (OECD Test Guideline 475). Result: negative.  
 Based on read across from structural related substance: zinc sulphate.  
 No additional chronic health data is available for this product.

**Other Health Effects Information:** No additional information available

**Toxicological Information:**  
Acute toxicity – oral: Not classified as acutely toxic by ingestion. LD50: >5,000 mg/kg (rat)  
Acute toxicity – dermal: Not classified as acutely toxic by skin contact. LD50: >5,000 mg/kg (rat)  
Acute toxicity – inhalation: Not classified as acutely toxic by inhalation. LC50: >5.7 mg/L/4 h (dust/mist, rat)  
Skin corrosion/irritation: Not classified.  
Serious eye damage/irritation: Not classified.  
**Respiratory or skin sensitisation:** Not classified.  
**Germ cell mutagenicity:** Not classified.  
**Carcinogenicity:** Not classified.  
**Reproductive toxicity:** Not classified.  
**STOT – single exposure:** Not classified.  
**STOT – repeated exposure:** Not classified.  
**Aspiration hazard:** Not classified.

**SECTION 12 ECOLOGICAL INFORMATION**

**Ecotoxicity:**  
Aquatic Toxicity  
 Very toxic to aquatic life with long lasting effects.  
 Fish toxicity: LC50 (Lepomis macrochirus (Bluegill sunfish), fresh water): 320 mg/L/96 h  
 Crustacean toxicity: LC50 (Daphnia magna, static): 0.098 mg/L/48 h  
 Algae toxicity: EC50 (Pseudokirchneriella subcapitata): 0.17 mg/L/72 h; NOEC (Pseudokirchneriella subcapitata, fresh water): 0.017 mg/L/72 h  
Terrestrial Ecotoxicity  
 Not classified as hazardous to the terrestrial environment

**Persistence/degradability:** Not rapidly degradable.  
**Bioaccumulative potential:** No evidence to indicate significant bioaccumulative potential.  
**Mobility in soil** No evidence to indicate significant mobility in soil.  
**Other adverse effects:** No additional adverse effects identified.

**SECTION 13 DISPOSAL CONSIDERATION**

Disposal of hazardous waste must be carried out in compliance with all applicable regional and national regulations. This product is NOT suitable for disposal by domestic landfill or via municipal sewers, drains, natural streams or rivers. It must be disposed as chemical waste in accordance with the local authority. Ensure that disposal of this product and its packaging is in accordance with the Hazardous Substances (Disposal) Notice 2017.

**Product Disposal:**

Generation of product waste should be minimized wherever possible. Dispose of product as chemical waste via a licenced service provider.

**Packaging Disposal:**

Empty packaging should be taken for recycling, recovery or disposal through a suitably qualified or licensed contractor. Care should be taken to ensure compliance with national and local authorities. Packaging may still contain harmful residue. Ensure that empty packaging is allowed to dry.

**SECTION 14 TRANSPORT INFORMATION**

Transport	ADR/RID	IMDG	IATA/ ICAO
UN number	3077	3077	3077
UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (ZINC OXIDE)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (ZINC OXIDE)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (ZINC OXIDE)
Transport hazard class(es)	9	9	9
Packing group	III	III	III

**SECTION 15 REGULATORY INFORMATION**

HSNO approval number	HSR002503
<b>New Zealand Inventory of Chemicals (NZIoC):</b> Listed in NZIoC	
<b>Australian Inventory of Industrial Chemicals:</b> Listed in AICIS Inventory	

**SECTION 16 OTHER INFORMATION**

The information contained in this Safety Data Sheet is obtained from current and reliable sources. Pure Ingredients provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. This Safety Data Sheet summarises our best current knowledge of the health and safety hazard information of the product but does not claim to be all inclusive. This document is intended only as a guide to the appropriate handling of this material.

Reference: supplier's SDS.

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