


SECTION 1: PRODUCT IDENTIFICATION

PRODUCT NAME	ZINC OXIDE, USP
PRODUCT CODE	0055
SUPPLIER	MEDISCA Inc. Tel.: 1.800.932.1039 Fax.: 1.855.850.5855 626 Tom Miller Road, Plattsburgh, NY, 12901 MEDISCA Pharmaceutique Inc. Tel.: 1.800.665.6334 Fax.: 514.338.1693 4509 Rue Dobrin, St. Laurent, QC, H4R 2L8 MEDISCA Australia PTY LTD Tel.: 1.300.786.392 Fax.: 61.2.9700.9047 Unit 7, Heritage Business Park 5-9 Ricketty Street, Mascot, NSW 2020
EMERGENCY PHONE	CHEMTREC Day or Night Within USA and Canada: 1-800-424-9300 NSW Poisons Information Centre: 131 126 National Chemical Emergency Centre 44(0)1235239670
RECOMMENDED USES	Pharmaceutical Manufacturing
RESTRICTIONS ON USE	Not applicable

SECTION 2: HAZARDS IDENTIFICATION

GHS CLASSIFICATION	Chronic Aquatic Toxicity (Category 1) Eye Irritation (Category 2B)	
PICTOGRAM		
SIGNAL WORD	Warning	
HAZARD STATEMENT(S)	Very toxic to aquatic life with long lasting effects. Causes eye irritation.	
ADVERSE PHYSIOCHEMICAL, HUMAN HEALTH AND ENVIRONMENTAL EFFECTS	Not Available	
PRECAUTIONARY STATEMENT(S)	Prevention	Avoid release to the environment. Wash hands thoroughly after handling. Do not touch eyes.
	Response	COLLECT SPILLAGE. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical help.
	Storage	Not Available
	Disposal	Dispose of contents and/or container in accordance with local regulations.

HMIS CLASSIFICATION	Health Hazard	1	Flammability	0
	Reactivity	0	Personal Protection	G

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

CHEMICAL NAME	Zinc Oxide
BOTANICAL NAME	Not applicable
SYNONYM	Not applicable
CHEMICAL FORMULA	ZnO
CHEMICAL FAMILY	Mineral oxides.
CAS NUMBER	1314-13-2
ALTERNATE CAS NUMBER	Not applicable
MOLECULAR WEIGHT	81.39

COMPOSITION

CHEMICAL NAME	CAS NUMBER	EC NUMBER	% BY WEIGHT
ZINC OXIDE	1314-13-2	215-222-5	100

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as health hazards and hence require reporting in this section.

SECTION 4: FIRST-AID MEASURES

IN CASE OF EYE CONTACT	Flush with copious amounts of water for 15 minutes, separating eyelids with fingers. If irritation persists seek medical aid.
IN CASE OF SKIN CONTACT	Wash with soap & water for 15 minutes. If irritation persists seek medical aid.
IF SWALLOWED	Call a physician. Wash out mouth with water. Do not induce vomiting without medical advice.
IF INHALED	Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician
MEDICAL ATTENTION AND SPECIAL TREATMENT	Get emergency medical help.
SYMPTOMS CAUSED BY EXPOSURE	Not expected to present a significant hazard under anticipated conditions of normal use.

SECTION 5: FIREFIGHTING MEASURES

SPECIFIC HAZARDS ARISING FROM THE CHEMICAL	Has exploded when mixed with chlorinated rubber. Reacts violently with magnesium, linseed oil. Zinc oxide and magnesium can react explosively when heated.
FLAMMABLE PROPERTIES	May be combustible at high temperature
HAZARDOUS COMBUSTION PRODUCTS	Under fire conditions, hazardous fumes will be present.
SUITABLE & UNSUITABLE EXTINGUISHING MEDIA	Small fire: dry chemical, CO2 or water spray. Large fire: dry chemical, CO2, alcohol resistant foam or water spray. Do not get water inside containers.

**PROTECTIVE EQUIPMENT AND
PRECAUTIONS FOR
FIREFIGHTERS**

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

SECTION 6: ACCIDENTAL RELEASE MEASURES
PERSONAL PRECAUTIONS

Wear respiratory protection. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

**METHODS & MATERIAL FOR
CONTAINMENT**

On land, sweep or shovel into suitable containers. Minimize generation of dust.

CLEANUP PROCEDURE

Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Wear respirator, chemical safety goggles, rubber boots and heavy rubber gloves. Stop leak if you can do it without risk. Prevent entry into waterways, sewers, basements or confined areas. Shut off all sources of ignition. Evacuate the area. If necessary, employ water fog to disperse the vapors. Absorb the matter with compatible vermiculite or other absorbing material. Place in a suitable container and retain for disposal. Ventilate and clean the affected area. Do not flush into sewerage system or to drains.

**REFERENCE TO OTHER
SECTIONS**

See Section 7 for information on safe handling. See Section 8 for information on personal protection equipment. See Section 13 for disposal information.

SECTION 7: HANDLING AND STORAGE
**PRECAUTIONS FOR SAFE
HANDLING**

Do not inhale. Avoid contact with eyes, skin and clothing. Avoid prolonged or repeated exposure. Wash thoroughly after handling. Store away from incompatible materials, in a well-ventilated area. Eliminate all sources of ignition. Store in accordance with local regulations. Do not store in unlabeled containers. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Use appropriate containment to avoid environmental contamination.

**CONDITIONS FOR SAFE
STORAGE**

Store away from incompatible materials, in a well-ventilated area. Eliminate all sources of ignition. Store in accordance with local regulations. Do not store in unlabeled containers. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Use appropriate containment to avoid environmental contamination.

STORAGE CONDITIONS

Store in original container, tightly sealed, protected from direct sunlight and moisture.

SECTION 8: EXPOSURE CONTROLS/ PERSONAL PROTECTION

Chemical Name: ZINC OXIDE CAS #: 1314-13-2

	Country	Limit value-8 hours		Limit value-Short Term		IDLH	REL	Advisory	Notes
		ppm	mg/m ³	ppm	mg/m ³				
OSHA	USA	N/L	5	N/L	N/L	N/L	N/L	N/A	N/A
ACGIH	USA	N/L	2	N/L	10	N/L	N/L	N/A	Respirable particulate matter
NIOSH	USA	N/L	5	N/L	10(1)	N/L	N/L	N/A	(1) 15 minutes average value
WEEL	USA	N/L	N/L	N/L	N/L	N/L	N/L	N/A	N/A
HSIS	Australia	N/L	5	N/L	10	N/L	N/L	N/A	N/A
HSE	UK	N/L	5	N/L	10	N/L	N/L	N/A	N/A

GESTIS	Austria	N/L	5(1)	N/L	N/L	N/L	N/L	N/A	(1) Respirable aerosol
GESTIS	Canada-Quebec	N/L	2(1)	N/L	10(1)(2)	N/L	N/L	N/A	(1) Respirable fraction (2) 15 minutes average value
GESTIS	Denmark	N/L	4	N/L	8	N/L	N/L	N/A	N/A
GESTIS	France	N/L	5	N/L	N/L	N/L	N/L	N/A	N/A
GESTIS	Hungary	N/L	5	N/L	N/L	N/L	N/L	N/A	N/A
GESTIS	Ireland	N/L	2	N/L	10(1)	N/L	N/L	N/A	(1) 15 minutes reference period
GESTIS	Israel	N/L	2	N/L	N/L	N/L	N/L	N/A	N/A
GESTIS	New Zealand	N/L	0.1	N/L	0.5(1)	N/L	N/L	N/A	(1) 15 minutes average value
GESTIS	Norway	N/L	5	N/L	N/L	N/L	N/L	N/A	N/A
GESTIS	Romania	N/L	5	N/L	10(1)	N/L	N/L	N/A	(1) 15 minutes average value
GESTIS	Singapore	N/L	5	N/L	N/L	N/L	N/L	N/A	N/A
GESTIS	South Africa	N/L	4(1)	N/L	20(1)(2)	N/L	N/L	N/A	(1) Respirable fraction (2) 15 minutes average value
GESTIS	South Africa Mining	N/L	5	N/L	10(1)	N/L	N/L	N/A	(1) 15 minutes average value
GESTIS	South Korea	N/L	2(1)	N/L	N/L	N/L	N/L	N/A	(1) Respirable fraction
GESTIS	Spain	N/L	2	N/L	10	N/L	N/L	N/A	N/A
GESTIS	Switzerland	N/L	3(1)	N/L	3(1)	N/L	N/L	N/A	(1) Respirable aerosol

N/L = Not listed ; N/A = Not Available

PELs are 8-hour TWAs = Limit value - Eight hours

Ceiling or Short-Term TWA = STEL = Limit value - Short term

EXPOSURE GUIDELINES

Consult local authorities for provincial or state exposure limits. Particulates not otherwise regulated, respirable fraction: 5 mg/m³

PERSONAL PROTECTIVE EQUIPMENT

Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by WHMIS or OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166. **Skin:** Wear appropriate gloves to prevent skin exposure. **Clothing:** Wear appropriate protective clothing to minimize contact with skin. **Respirators:** Follow WHMIS or OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced. **Thermal Hazards:** For products representing a thermal hazard, appropriate Personal Protective Equipment should be used.

SPECIFIC ENGINEERING CONTROLS

Adequate mechanical ventilation. Fumehood, eye wash station, and safety shower.

BIOLOGICAL MONITORING

Not available

CONTROL BANDING

Not available

NOTES

The substance can be absorbed into the body by inhalation of its aerosol and by ingestion. A harmful concentration of airborne particles can be reached quickly especially for zinc oxide fume particles.

Manufacturer OEL: OSHA PEL (TWA): 15 mg/m³ (Total dust)

Manufacturer OEL: OSHA PEL (TWA): 5 mg/m³ (Fume)

Manufacturer OEL: OSHA PEL (TWA): 5 mg/m³ (Respirable fraction)

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE	Solid				
DESCRIPTION	Very fine, odorless, amorphous, white or yellowish white powder, free from gritty particles. It gradually absorbs carbon dioxide from air.				
SOLUBILITY	Insoluble in water and in alcohol; soluble in dilute acids.				
ODOR	Odorless				
FLAMMABILITY	May be combustible at high temperature				
AUTO-IGNITION TEMPERATURE	Not available	BOILING POINT	Sublimes	DECOMPOSITION TEMPERATURE	Not available
EVAPORATION RATE	Not available	EXPLOSIVE LIMIT	Not available	FLASH POINT	Not available
log P (OCTANOL-WATER)	Not available	LOWER FLAMMABLE/EXPLOSIVE LIMIT(S)	Not available	MELTING/FREEZING POINT	1975 °C, 3587 °F
PARTICLE CHARACTERISTICS	Not available	OXIDIZING PROPERTY	Not available	pH	6.07 – 6.55 (< 0.01 %) (20 °C)
RELATIVE DENSITY (WATER = 1)	Not available	SPECIFIC GRAVITY	5.61 (20 °C)	UPPER FLAMMABLE/EXPLOSIVE LIMIT(S)	Not available
VAPOR DENSITY (AIR = 1)	Not available	VAPOR PRESSURE	< 0.0000001 kPa (25 °C)	VISCOSITY	Not available

The physical data presented above are typical values and should not be construed as a specification.

SECTION 10: STABILITY AND REACTIVITY

REACTIVITY	Has exploded when mixed with chlorinated rubber (215 °C). Reacts violently with magnesium, linseed oil. Zinc oxide and magnesium can react explosively when heated.
CHEMICAL STABILITY	Stable under recommended storage conditions
INCOMPATIBLE MATERIALS	Strong oxidants, Chlorinated rubber, Magnesium, Linseed oil, Strong bases, Strong acids, Hydrogen fluoride, Aluminum, Hexochlorethane, Zinc chloride, Phosphoric acid, water
HAZARDOUS DECOMPOSITION PRODUCTS	Toxic fumes of carbon monoxide, carbon dioxide, nitrogen oxides and other gases may occur
HAZARDOUS POLYMERIZATION	Will not occur
POSSIBILITY OF HAZARDOUS REACTION	Not established
CONDITIONS TO AVOID	Moisture, sunlight and extreme temperatures

SECTION 11: TOXICOLOGICAL INFORMATION

ACUTE TOXICITY	<p>Oral: Rat: LD50: (mg/kg): > 5000 Dermal: Rat: LD50: (mg/kg): > 2000 Inhalation: Rat: LC50: (mg/L/4hr): Not available</p>
SKIN CORROSION/IRRITATION	Based on available data, the classification criteria are not met.
SERIOUS EYE DAMAGE/EYE IRRITATION	<p>Causes eye irritation. Rabbit: 500 mg Eye irritation (24hrs): Result: Mild.</p>
RESPIRATORY SENSITIZATION	Due to lack of data the classification is not possible.
SKIN SENSITIZATION	Based on available data, the classification criteria are not met.
GERM CELL MUTAGENICITY	Based on available data, the classification criteria are not met.
CARCINOGENICITY	<p>OSHA ZINC OXIDE is not listed. NTP ZINC OXIDE is not listed. IARC ZINC OXIDE is not evaluated. California Proposition This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.</p>
ADDITIONAL CARCINOGENICITY INFORMATION	<p>Due to lack of data the classification is not possible. CLASSIFICATION: D; not classifiable as to human carcinogenicity.</p>
REPRODUCTIVE TOXICITY	<p>Based on available data, the classification criteria are not met. 2-3 mg/day had no effect on reproduction. Developmental Toxicity - Rat - Oral: Specific Developmental Abnormalities: Homeostasis Effects on Newborn: Stillbirth. Effects on Newborn: Growth statistics (e.g., reduced weight gain).</p>
SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE	Due to lack of data the classification is not possible.
SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE	Due to lack of data the classification is not possible.
ASPIRATION HAZARDS	Based on available data, the classification criteria are not met.
SIGNS AND SYMPTOMS OF EXPOSURE	<p>ROUTES OF EXPOSURE: Oral, Dermal, Inhalation, Eye contact EARLY ONSET SYMPTOMS RELATED TO EXPOSURE: Not available DELAYED HEALTH EFFECT FROM EXPOSURE: Not available</p> <p>Symptoms related to the physical, chemical, and toxicological characteristics: Vomiting. Gastrointestinal disturbances.</p> <p>Medical conditions aggravated by exposure: Heart problems. Glaucoma.</p> <p>Exposure to high levels of dust can cause metallic taste, marked thirst, coughing, fatigue, weakness, muscular pain and nausea followed by fever and chills. Severe over exposure may result in bronchitis or pneumonia with a bluish tint to the skin.</p>
POTENTIAL HEALTH EFFECTS	<p>Inhalation May be harmful if inhaled. May cause respiratory tract irritation. The substance as a fume is irritating to the respiratory tract. Inhalation of Zinc Oxide fume may cause metal fume fever, an illness that lasts less than 48 hours. The "no effect level" for induction of metal fume fever is in the range of 5 - 15 mg/m³ (the effects may be delayed)</p>

Ingestion	May be harmful if swallowed.
Skin	May be harmful if absorbed through skin. May cause skin irritation. Prolonged skin contact may produce severe dermatitis.
Eyes	Causes eye irritation.

SECTION 12: ECOLOGICAL INFORMATION

ECOTOXICITY	EC50: 48 Hr: Crustacea: Daphnia Magna: (mg/L): Not available LC50: 96 Hr: Fish: Pimephales promelas: (mg/L): 0.000098 LC50: 96 Hr: Fish: Zebra danio: (mg/L): 0.927 - 0.2589 EC50: 72 Hr: Algae: Pseudokirchneriella subcapitata: (mg/L): 0.042
PERSISTENCE AND DEGRADABILITY	PURE CULTURE: Zinc oxide, present at 4.8 umol, exhibited 100% dissolution in 40 hours at 24 deg C using an anaerobic N-fixing Clostridium sp isolated from coal-cleaning waste. However, the dissolution of zinc oxide was attributed primarily to the effects of organic acids and low pH; biosorption of solubilized zinc by cell biomass was negligible.
BIOACCUMULATIVE POTENTIAL	Not available
MOBILITY IN SOIL	Insoluble in water. 0.00016 g/ 100 mL cold water. 0.00029 g/ 100mL (20 °C)*
OTHER ADVERSE EFFECTS	The substance is very toxic to aquatic organisms. The substance may cause long-term effects in the aquatic environment. It is strongly advised not to let the chemical enter into the environment.
NOTES	This product is not intended to be released into the environment *Manufacture data

SECTION 13: DISPOSAL CONSIDERATIONS

DISPOSAL METHODS	Dispose of in accordance with federal / local laws and regulations. Avoid release into the environment.
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SECTION 14: TRANSPORT INFORMATION

UN PROPER SHIPPING NAME	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
UN NUMBER	3077
CLASS	9
PACKING GROUP	III
AUSTRALIA HAZCHEM	2Z
EU TRANSPORT IN BULK ACCORDING TO ANNEX II OF MARPOL 73/78 AND THE IBC CODE	Not Listed
ENVIRONMENTAL HAZARDS	Not available

**SPECIAL SHIPPING
INFORMATION**

Not applicable

SECTION 15: REGULATORY INFORMATION
UNITED STATES REGULATIONS

Chemical Name & CAS	CERCLA 40 CFR Part 302.4	SARA (Title III) 40 CFR	EPA 40 CFR Part 355		Pennsylvania	Right-to-know		California Prop 65
			Appendix A	Appendix B		New Jersey	Massachusetts	
ZINC OXIDE 1314-13-2	N/L	N/L	N/L	N/L	X	X	X	N/L

N/L = Not Listed; X = Listed

AUSTRALIAN REGULATIONS

Chemical Name & CAS	Poisons and Therapeutic Goods	Therapeutic Goods Act	Code of Practices - Illicit Drug	Poisons Standard	Work Health and Safety Regulations	Inventory of Industrial Chemicals
ZINC OXIDE 1314-13-2	N/L	N/L	N/L	N/L	N/L	N/L

N/L = Not Listed

EU REGULATIONS

Chemical Name & CAS	REACH ANNEX XVII	REACH ANNEX XIV	EC 1005/2009	EC 850/2004	EC 1107/2009	PIC - Prior Informed Consent Regulation	EC 2012/18
ZINC OXIDE 1314-13-2	N/L	N/L	N/L	N/L	N/L	N/L	N/L

N/L = Not Listed; X = Listed

Any EU regulation not listed above is not applicable to this product.

**SUBJECT TO INTERNATIONAL
AGREEMENT**

Not applicable

SECTION 16: OTHER INFORMATION
REFERENCES

Available upon request

ABBREVIATIONS AND ACRONYMS

ACGIH - American Conference of Governmental Industrial Hygienists; **AIHA WEEL** – American Industrial Hygiene Association Workplace Environment Exposure Levels; **CAESAR** – Computer Assisted Evaluation of industrial chemical Substances According to Regulations; **CAS** – Chemical Abstract Service; **CERCLA** – Comprehensive Environmental Response, Compensation, and Liability Act; **EC50** – Effective Concentration, 50%; **EPA** – Environmental Protection Agency; **GHS** – Global Harmonized System; **HMIS** – Hazardous Materials Information System; **HSE** – Health and Safety Executive; **HSIS** – Hazardous Substances Information System; **IARC** – International Agency for Research on Cancer; **IDLH** – Immediately Dangerous to Life or Health; **IRFMN** – Ready Biodegradability Model; **ISS** – Instituto Superiore Sanità; **LC50** – Lethal Concentration, 50%; **LD50** – Lethal Dose, 50%; **MSHA** - Mine Safety and Health Administration; **NIOSH** – National Institute for Occupational Safety and Health; **NTP** – National Toxicology Program; **OSHA PEL** – Occupational Safety & Health Administration Permissible Exposure Limits; **QSAR** – Quantitative Structure-activity relationship; **REL** - Recommended Exposure Limit; **SARA** – Superfund Amendments and Reauthorization Act; **STEL** – Short Term Exposure Limit; **TLV** – Threshold Limit Value; **TWA** – Time Weighted Average; **WHMIS** – Workplace Hazardous Materials Information System

LAST REVISION

05/2024

SUPERSEDES

11/2023

For a list of changes to the SDS since the last version, please communicate with MEDISCA at www.medisca.com

DISCLAIMER

This document was created in accordance with OSHA, Safe Work Australia and WHMIS regulations. The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. MEDISCA[®] shall not be held liable for any damage resulting from handling or from contact with the above product. Recipients of the product must take responsibility for observing existing laws and regulations.

SUPPLEMENTARY INFORMATION

For all country specific requirements not outlined on this Safety Data Sheet, please request Supplementary Page to this Safety Data Sheet.