

KVB PROCESSORS PVT. LTD.
MSDS - ZINC OXIDE

MATERIAL SAFETY DATA SHEET

SECTION 1. Product Identity and Responsible Party	
Product Name	ZINC OXIDE
Synonyms	Chinese White, ZnO, White Seal. Pharmaceutical, BP
Molecular Formula	ZnO
Trade Name	ZOCO
Product Grades	All commercial quality Product Grades
Chemical Formula: ZnO CAS number:	1314-13-2
Manufacturer's Name:	KVB Processors Pvt Ltd. Plot no 24/25, Survey 441/2,4,6 Village Mahim, Taluka Palghar, Dist -Thane , Maharashtra , India 401 404
Use of the substance/preparation:	Industrial applications: Production of rubber. Production of tyres. Varistors. Ceramics. Glass. Manufacture of chemicals. Manufacture of Lubricants. Agricultural industry Ferrites. Manufacture of cosmetics. Veterinary Product. Pharmaceuticals. Plastics. Glues. Pigments to paint and printing inks. Enamels.

KVB PROCESSORS PVT. LTD.

MSDS - ZINC OXIDE

SECTION 2. Composition/Information on Ingredients

Substance/Preparation has no human health hazard.

Occupational Exposure Limit(s), if available, are listed in Section 8.

Component	CAS No.	% Range
Zinc Oxide as ZnO (dry)	1314-13-2	95%-100%
Lead as PbO	1317-36-8	Pb & Cd are naturally occurring impurities.
Cadmium as CdO	1306-19-0	Trace levels vary with grade.

SECTION 3. Hazards Identification

Route(s) Of Entry: 1. Inhalation.
2. Mechanical irritation to skin and eyes.

Carcinogens : Not a NTP/IARC carcinogen.

Signs & Symptoms of Exposure: Dry throat, cough, dry itching skin.

Human: Excess bulk exposure may cause acute respiratory irritant or dry skin. No chronic hazards.

Metal Fume Fever: Excessive inhalation exposure within hours of ZnO formation may cause 'metal fume fever.' Symptoms are chills, metallic taste, severe headache. This hazard only exists at the manufacture and not in later handling or use. Symptoms often persist 24 hours. See Section 4, First Aid.

Other Human hazard reports: Less than commercial quality, or tech grade, zinc oxide may contain additional impurities requiring exposure considerations not covered by this MSDS.

Environmental: ZnO is not water soluble. However if chemically in solution, the net Zn in certain situations is toxic to a limited group of aquatic organisms.

KVB PROCESSORS PVT. LTD.

MSDS - ZINC OXIDE

SECTION 4. FIRST AID PROCEDURES	
First Aid : Remove person from exposure.	
Inhalation: If inhaled, remove to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Obtain medical attention.	
Skin Contact: In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention if irritation occurs. Wash with soap and water. Restore oil with lotion if necessary.	
Ingestion: Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately.	
Eye Contact: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention.	
Protection of First Responders: Wear suitable respirator if bulk dusty conditions exceed permissible exposure levels listed in Section 8. Wear additional protection for personal comfort as conditions warrant.	

SECTION 5. FIRE, EXPLOSION AND FIRE FIGHTING DATA

Flash Point	Product is a solid (powder form), is non-combustible, and will not burn.
Extinguishing Media	Use extinguishing media based on surrounding materials. Avoid release of fire control water to environment.
Hazardous (de)composition Product(s)	None

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions : Immediately contact emergency personnel. Keep unnecessary personnel away. Use suitable protective equipment (Section 8).

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Methods for cleaning up : If emergency personnel are unavailable vacuum or carefully scoop up spilled materials and place in an appropriate container for disposal. Avoid creating dusty conditions and prevent wind dispersal.

KVB PROCESSORS PVT. LTD.

MSDS - ZINC OXIDE

Note: see section 8 for personal protective equipment and section 13 for waste disposal.

SECTION 7. HANDLING AND STORAGE

Storage: Keep dry. To minimize carbonation (and resulting potency degradation), store in lower humidity, and keep closed in original containers until ready for use. Once opened, minimize dusting to reduce human and environment exposure.

Handling: Follow good practices to control and avoid exposure to nuisance dust. See Section 8.

SECTION 8. EXPSURE CONTROLS, PERSONAL PROTECTION

Respiratory protection: Recommended. Use NIOSH approved dust filter respirator.

Skin Protection/ Hand Protection :- Chemical-resistant, impervious gloves or gauntlets complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Ventilation: Local exhaust recommended.

Protective gloves: Recommended. Any glove type offering comfort is suitable.

Protective clothing: Recommended in bulk dust conditions.

Eye Protection: Safety eye wear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.

Hygiene measures :- General Eating, drinking and smoking should be prohibited in area where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking.

OSHA Occupational Exposure Limits/Recommendations

Hazardous Component	CAS	% Range	A CGIH TLV/	OSHA PEL
Zinc Oxide as ZnO (dry)	1314-13-2	95 - 100	5 mg/m3*	5 mg/m3*
Lead as PbO (1)	1317-36-8			50 ug/m3
Cadmium as CdO (1)	1306-19-0			5 ug/m3
1)PbO & CdO are naturally occurring impurities, % Range varies with grade				*Respirable fraction

KVB PROCESSORS PVT. LTD.

MSDS - ZINC OXIDE

SECTION 9. PHYSICAL AND CHEMICAL CHARACTERICS

Boiling Point:	Not applicable
Melting Point:	1975 C
Specific Gravity:	5.6
Molecular Weight:	81.38 (ZnO)
Oxidation qualities:	Not applicable
Odor, smell:	Odorless.
Vapor Density:	Not applicable
Typical particle size:	<=10 Microns
Explosive:	Not explosive
Vapor Pressure:	@1500C = 12mm Hg
Evaporation Rate:	N/A (Butyl Acetate = 1)
Solubility In Water:	Insoluble (negligible, <2mg/l)
Soluble:	In bases and acids
Fire qualities:	Will not burn
pH:	6.8 to 7.2
Physical State:	Powder
Appearance:	White, cream, or yellowish color
Volatile:	0.1% nominal (due to loss of H2O or CO2)

SECTION 10. STABILITY AND REACTIVITY DATA

Stability: Stable under normal conditions.	Hazardous Polymerization: Will not occur.
Incompatibility or Material To Avoid: 1. Heated Magnesium. 2. Chlorinated Rubber Above 215C.	Decompose: Decomposes in bases & strong acids, neutralizing pH. Also will decompose in strong heated resins and polymers.
No hazardous materials are formed during thermal decomposition.	

SECTION 11. TOXICOLOGICAL

Acute toxicity – Oral	:LD 50 (rat, Lethal Dose (50%)): >15000 mg ZnO/kg (OECD 401)
Acute toxicity-Inhalation	:LC 50 (rat, 4 hours): > 5.7 mg ZnO (Klimisch et al. 1982).
Chronic toxicity	:NOAEL: 50 mg/ Zn/day (based on human clinical studies).
Carcinogenicity	:No evidence of carcinogenicity in laboratory animals or in man.
Mutation	:No evidence of genetic toxicity, in-vitro tests.
Reproduction toxicity	:No evidence of reproduction toxicity.

KVB PROCESSORS PVT. LTD.

MSDS - ZINC OXIDE

Acute toxicity – Dermal	:No data available.
Sensitization	:No sensitizing potential (guinea pig).
Skin irritation	:Not irritating (rabbit). OECD 404.
Eye irritation	:Not irritating (rabbit). OECD 405.

SECTION 12. ECOLOGICAL

Mobility	: Not applicable.
Persistence	: Not applicable.
Biological accumulation potential	: Not applicable.
Ecotoxicity	: EC 50 (Senastrum capricornutum, 72 hours): 170 mg ZnO. LISEC 1997.

SECTION 13. DISPOSAL CONSIDERATIONS

Recycle: Material may be recyclable. If disposed, follow regulations.



The generation of waste should be avoided or minimized wherever possible. Avoid dispersal or spilled material and runoff and contact with soil, waterways, drains and sewers. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. This product is recyclable. Consideration of disposal via this route should be given.

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MSDS - ZINC OXIDE

SECTION 14. TRANSPORT INFORMATION	
Not DOT 172 or IMO Regulated.	NMFC Class 55.
NAFTA Tariff Class 2817.00.0000, Sched. B	Country of Origin: INDIA

International transport regulations

Regulatory information	UN number	Proper shipping name	Class	Packing group	Label	Additional information
ADR/RID Classification	UN3077	Environmentally hazardous substance, solid, n.o.s. (zinc oxide)	9	III		Hazard identification number 90 Limited quantity LQ27 CEFIC Tremcard 90GM7-III
ADN Classification	UN3077	Environmentally hazardous substance, solid, n.o.s. (zinc oxide)	9	III		---
IMO/IMDG Classification	Not regulated.	---	---	---	---	---
IATA Class	Not regulated.	---	---	---	---	---

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SECTION 15. REGULATORY INFORMATION

SARA 302 : RQ=None, TPQ=None.

SARA 311/312 : Yes (Acute).

SARA 313 : Zn & Pb Compounds.

RCRA 261 : TCLP Determination (Pb, Cd).

CERCLA 102/103 : Name List, RQ=None.

SECTION 16. OTHER INFORMATION

HMIS Hazard Rating:

Rating Definitions (Paint& Coating Industry)

0 = Minimal, 1 = Slight, 2 = Moderate, 3 = Serious, 4 = Severe

Health 1

Flammability 0

Reactivity 0

Personal Protection E

Personal Protective Index E (recommended with bulk dust only) = Gloves + Mask + Goggles.

Label Precautions : Caution, may cause irritation to lungs, throat, nose, eyes or skin. Wear gloves, dust mask and safety glasses when handling dusty product in bulk.

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MSDS - ZINC OXIDE

DISCLAIMER

The data listed on this sheet is believed to be accurate, complete, and up to date by the preparer utilizing reasonably available published studies or other publications. We are not responsible for any inadvertent error or omission.

End use of this product will include many factors beyond our control, and we cannot accept liability for any accident, injury or damage caused by its use.

This MSDS is valid worldwide except in the European Union, and in other jurisdictions where local law is contrary to information herein.