

GHS Safety Data Sheet

SDS No. : ZNO01TAEG

Date Issued : 2010/01/27

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Section 1. Identification of the substance or mixture and of the supplier

Product Information

Product name: ZnO Zinc oxide

Product number:	Purity	Form	Size or Shape
ZNO05PB	99%(2N)	powder	ca.1 μm
ZNO06PB	99.9%(3N)	powder	ca.1 μm
ZNO07PB	99.99%(4N)	powder	ca.1 μm
ZN006_ZNOR4003	4N	tablet & target	φ 10×t5 (mm)
ZN006_ZNOR4002	4N	tablet & target	φ 20×t5 (mm)
ZN006_ZNOT4014	4N	tablet & target	φ 101.6×t5 (mm)
ZN006_ZNOT4058	4N	tablet & target	φ 152.4×t5 (mm)

Company Information:

Manufacturer : Kojundo Chemical Laboratory Co., Ltd.

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Recommended uses and restrictions on use: For research purposes

Section 2. Hazards identification

GHS Classification

Health Hazards	Environmental Hazards	Physical Hazards
Reproductive toxicity : Category 2 Specific target organ toxicity, single exposure: Category 1	Hazardous to the aquatic environment, acute toxicity : Category 1 chronic toxicity : Category 1	Flammable solids : Not classified Pyrophoric solids : Not classified Self-heating substances and mixtures : Not classified Substances and mixtures which, in contact with water, emit flammable gases : Not classified

GHS Label: C, V



Pictograms or symbols:

Warning word: DANGER

Hazard information	Description of precaution
Suspected of damaging fertility or the unborn child Causes damage to organs (respiratory tract, Systemic toxicity) Very toxic to aquatic life Very toxic to aquatic life with long lasting effects	Obtain special instructions. Read and understand all safety precautions before handling. Wear protective gloves/protective clothing/eye protection/respiratory protection/face protection during handling. Avoid breathing dust/mist/gas/fume/vapors/spray. Do not eat, drink or smoke when using this product, and wash hands thoroughly after handling. Avoid release to the environment and collect spillage. Call a POISON CENTER or doctor/physician if you feel unwell. Store locked up. Dispose of contents/ container in accordance with local/national regulations.



High Purity Materials

KOJUNDO CHEMICAL LABORATORY CO.,LTD.

Section 3. Composition / information on ingredients

Chemical or common name:	Zinc oxide
Chemical formula:	ZnO
Single Substance or Compound:	Single substance
Composition:	100%
CAS #:	1314-13-2
RTECS#:	ZH4810000
TSCA inventory :	Listed
EINECS:	2152225

Section 4. First aid measures

Eye contact:	Promptly wash eyes with plenty of water while lifting the eye lids. Continue to rinse for at least 15 minutes and get medical attention.
Skin contact:	Promptly flush contaminated skin with soap or mild detergent and water. Contact physician if irritation continues.
Inhalation:	Remove the exposed person immediately and provide fresh air. Get medical attention.
Ingestion:	Rinse mouth and throat with water. Get medical attention immediately.

Section5. Fire fighting measures

Extinguishing media:	Use media appropriate for surrounding fire.
Fire fighting:	The product is not combustible. Self-contained breathing apparatus and full protective clothing should be used, if the material is involved in fire.

Section 6. Accidental release measures

Personal Precautions:	Workers should use protective wears to prevent contact with the spilt adhesive and inhalation of its vapor/dusts.
Environmental hazard precautions:	Shut off leak if without risk. Prevent flow out to river, etc. so as not to badly affect.
Method for containment and cleaning up:	Indoor leakage: Ventilate as much as possible until the cleaning is completed. Outdoor leakage: Work from the windward and evacuate the leeward crowd. Gather up, pack in closed DOT-approved waste container as much as possible. Carefully collect remnant and move to a safe place.

Section 7. Handling and storage

Precautions to be taken in handling:

Safe handling:	Use protective wears and local ventilation equipment, if inhalation or skin contact is foreseen. Avoid prolonged or repeated exposure.
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Precautions to be taken in storage:

General precautions:	Store the material in a sealed container. Store in a cool, dry, well ventilated and dark place away from incompatible materials.
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Section 8. Exposure controls / personal protection

Exposure guideline:	ACGIH(2019)		OSHA(2006)
	Chemical Name	TLV-TWA mg/m ³	TLV-STEL mg/m ³
	Zinc oxide	2 (R)	10 (R)
			5 (R), 15 (T), 5 (F)

R; Respirable particles, T; Total dust, F; Fume

Facility measures: Local ventilation of closed work room or total proper ventilation to prevent inhalation.

Protective ware: Wear appropriate NIOSH/MSHA-approved respirator, safety goggles, impervious gloves, protective wear, protective boots.

Section 9. Physical and chemical properties

Appearance:	White solid, odorless
Chemical formula:	ZnO
Formula weight:	81.4
Melting point:	1975 °C (under pressure)
Boiling point:	— (sublime)
Density:	5.6 g/cm ³
Solubility:	Insoluble ; water, ethanol Soluble ; acid, alkali
Flammable:	Non-combustible substance
Oxidation:	None

Section10. Stability and reactivity

Stability: Stable in closed container.

Reactivity:

Incompatibility: Aluminum, magnesium, chlorinated rubber, linseed oil, strong oxidizing agent.

Section11. Toxicological information

Acute toxicity (Oral, dermal, inhalation-dust):	GHS : Not classified.; Falls below the lowest level. Oral rat LD ₅₀ > 5000 mg/kg bw (EU-RAR(2004)) Dermal rabbit LD ₅₀ > 5000 mg/kg (EPA Pesticide(1992)) Inhalation-dust rat LC ₅₀ (4hr) > 5.7 mg/L (EU-RAR(2004))
Skin corrosive / irritation:	GHS : Not classified.; Falls below the lowest level.
Serious eye damage / irritation:	GHS : Not classified.; Falls below the lowest level.
Respiratory sensitization:	GHS : No data available
Skin sensitization:	GHS : Not classified.; Falls below the lowest level.
Germ cell mutagenicity:	GHS : Not classified.; Falls below the lowest level.
Carcinogenicity:	GHS : No data available
Reproductive toxicity:	GHS : Category 2 ; Suspected of damaging fertility or the unborn child
Specific target organ toxicity	
— single exposure:	GHS : Category 1 ; Causes damage to organs (respiratory tract, Systemic toxicity)
— repeated exposure:	GHS : No data available
Aspiration hazard:	GHS : No data available

Section12. Ecological information

Ecotoxicity:

Hazardous to the aquatic environment

— acute toxicity: GHS : Not classified.; Falls below the lowest level.
Crustacea(Daphnia magna) LC₅₀ (48h)= 0.122 mg/L as ZnO



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— chronic toxicity:	GHS : Category 4 ; May cause long lasting harmful effects to aquatic life
Hazardous to the ozone layer	GHS : No data available No Freon or Halon
Fish toxicity:	See above
Degradability:	No data available
Bioaccumulative potential:	No data available
Mobility in soil:	No data available

Section 13. Disposal considerations

Disposal method: User of the product should contract with the local government or licensed 'Industrial Waste Haulers' for disposal of waste.

Section 14. Transport information

UN number:	3077
IATA shipping name:	Environmentally hazardous substance, solid, n.o.s.
IATA hazard class:	Class 9 (Miscellaneous dangerous substances and articles)
IATA packing group:	III
HS code:	2817.00
Marine pollution:	Yes

Section 15. Regulatory information

TSCA inventory: listed.

Please refer to any other local / national measures that may be relevant.

Section 16. Other information

The information described above is believed to be correct. However, Kojundo Chemical Lab. makes no representation, warranty nor guarantee of any kind with respect to the information on this data sheet or any use of the product based upon this information.

