

# Zinc oxide safety technical specification

## Part 1: Names of chemicals

Chinese name of chemical:	zinc oxide
English name of chemical:	zinc oxide
Chinese Name 2:	zinc white
English Name 2:	zinc white
Technical specification number:	1320
CAS No. :	1314-13-2
Molecular formula:	ZnO
Molecular weight:	81.38

## Part 2: Component/composition information

Harmful ingredients	content	CAS No.
zno	99.0% or higher	1314-13-2

## Part 3: Overview of risk

Danger category:	
Way of invasion:	
Health hazards:	Metal smoke fever may occur 4-8 hours after inhalation of zinc oxide dust. There is metal taste in the mouth, thirst, pharyngeal itching, and then chest tightness, cough, shortness of breath, weakness, muscle joint pain, and can be accompanied by headache, nausea, vomiting, abdominal pain, and then appear chills, fever, increased white blood cell count. People exposed to zinc oxide have reported general weakness and weight loss.
Environmental hazards:	
Explosion danger:	This product does not burn.

## Part 4: First aid measures

Skin contact:	Remove contaminated clothing and rinse with running water.
Eye contact:	Lift eyelid, rinse with running water or normal saline. Go to a doctor.
Inhalation:	Leave the scene quickly to fresh air. If breathing is difficult, give oxygen. Go to a doctor.
Eat:	Drink plenty of warm water to induce vomiting. Go to a doctor.

## Part 5: Fire control measures

Hazardous characteristics:	No special combustion and explosion characteristics.Can react violently with magnesium, causing an explosion.
Harmful combustion products:	Zinc oxide.
Fire extinguishing method:	Fire fighters must wear full-body fire protection suits and fight fires upwind.When extinguishing a fire, move the container from the fire site to an open area as far as possible.

#### Part 6: Emergency treatment of leakage

Emergency treatment:	Isolate contaminated areas and restrict access.It is recommended that emergency personnel wear dust masks (full hoods) and protective clothing.Avoid dust, carefully sweep, put in a bag to a safe place.If a large number of leakage, with plastic cloth, canvas cover.Collect, recycle or transport to waste treatment site for disposal.
----------------------	---

#### Part 7: Operation, disposal and storage

Precautions for operation:	Closed operation, local exhaust.Operators must be specially trained and strictly abide by the operating procedures.It is recommended that the operator wear a self-priming filter dust mask, chemical safety glasses, protective clothing and latex gloves.Avoid dust generation.Avoid contact with oxidants.Handle with care to prevent packing damage.Equipped with leakage emergency treatment equipment.Empty containers may contain hazardous materials.
Storage precautions:	Store in a cool, ventilated warehouse.Keep away from fire and heat source.Should be stored separately from the oxidant, do not mix storage.The storage area shall be equipped with suitable materials to accommodate leaks.

#### Part 8: Contact control/personal protection

Occupational exposure limit	
The MAC (mg/m <sup>3</sup> ) :	5
Soviet MAC(mg/m <sup>3</sup> ) :	Dust [6]
TLVTN:	ACGIH 5mg/m <sup>3</sup> (smoke) 10mg/m <sup>3</sup> (dust)
TLVWN:	ACGIH 10 mg/m <sup>3</sup> (smoke)
Monitoring methods:	Flame atomic absorption spectrometry;Dithizone spectrophotometry;Catalytic polarography
Engineering control:	Closed operation, local exhaust.
Respiratory protection:	When the dust concentration in the air exceeds the standard, it is recommended to wear a self-priming filter dust mask.Emergency rescue or evacuation, should wear air breathing apparatus.
Eye protection:	Wear chemical safety glasses.
Body Protection:	Wear protective penetrant overalls.
Hand protection:	Wear latex gloves.
Other protection:	After work, shower and change.Pay attention to personal hygiene.

#### Part 9: Physicochemical properties

Main ingredients:	Content: $\geq 99.0\%$ ;Iron salt $\leq 0.005\%$ ;Arsenic $\leq 0.0002\%$ ;Burning loss $\leq 1.0\%$ .
-------------------	--

Appearance and character:	A white hexagonal crystal or powder.
PH:	
Melting point (°C) :	1975
Boiling point (°C) :	There is no information
Relative density (water =1) :	5.61
Relative vapor density (air =1) :	There is no information
Saturated vapor pressure (kPa) :	There is no information
Heat of combustion (kJ/mol) :	meaningless
Critical temperature (°C) :	meaningless
Critical pressure (MPa) :	meaningless
Log value of octanol/water partition coefficient:	There is no information
Flash point (°C) :	meaningless
Ignition temperature (°C) :	meaningless
Explosion limit %(V/V) :	meaningless
Lower explosion limit %(V/V) :	meaningless
Solubility:	Insoluble in water, insoluble in ethanol, soluble in acid, sodium hydroxide aqueous solution, potassium cyanide, etc.
Main uses:	It is used as a pigment for paints and as a filler for rubber. It is used in medicine for ointments, zinc paste and rubber plasters.
Other physical and chemical properties:	

#### Part 10: Stability and reactivity

Stability:	
Prohibited items:	Strong oxidant.
Conditions to avoid exposure:	

Polymerization hazards:	
Decomposition products:	

**Part 11: Toxicological data**

Acute toxicity:	LD50: No data is available  LC50: No data is available
Subacute and chronic toxicity:	
Stimulus:	
Allergenic:	
Mutagenicity:	
Teratogenicity:	
Carcinogenicity:	

**Part 12: Ecological data**

Ecotoxicological toxicity:	
Biodegradability:	
Non-biodegradability:	
2. Bioenrichment or bioaccumulation:	
Other harmful effects:	No information.

**Part 13: Waste disposal**

Nature of waste:	
Waste disposal method:	Dispose in safe burial.
Precautions for abandonment:	

**Part 14: Transport information**

Dangerous Goods No. :	There is no information
The UN number:	There is no information
Packing mark:	
Packing category:	Z01
Packing method:	No information.
Transportation matters needing attention:	The packing should be complete and the loading should be safe. During transportation, ensure that containers do not leak, collapse, fall, or damage. It is strictly forbidden to mix and transport with oxidizer. During transportation, it

should be protected from sun exposure, rain and high temperature.

#### **Part 15: Regulatory information**

Regulatory information	Regulations on the Safety Management of Chemical Dangerous Goods (issued by The State Council on February 17, 1987), Detailed rules for the Implementation of regulations on the Safety Management of Chemical Dangerous Goods (Hua Lao Fa [1992] No. 677), Regulations on the Safe Use of Chemicals in the Workplace ([1996] Ministry of Labor Fa No. 423), etc. Corresponding provisions have been made for the safe use, production, storage, transportation and handling of dangerous chemicals.
------------------------	--

#### **Part 16: Additional Information**

References:	
Department filling in the form:	
Data audit unit:	
Modification description:	
Other information:	