

4. First aid measures

First aid measures

General advice	If symptoms persist, call a physician.
Eye contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. If symptoms persist, call a physician.
Skin contact	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.
Inhalation	Remove to fresh air. If breathing is irregular or stopped, administer artificial respiration.
Ingestion	If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.
Self-protection of the first aider	Use personal protective equipment as required.

Most important symptoms and effects, both acute and delayed

Symptoms No known effects under normal use conditions.

Indication of any immediate medical attention and special treatment needed

Note to physicians Effects of exposure (inhalation, ingestion or skin contact) to substance may be delayed.

5. Fire-fighting measures

Suitable extinguishing media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media No information available.

Specific hazards arising from the chemical

None in particular.

Explosion data

Sensitivity to mechanical impact None.

Sensitivity to static discharge None.

Protective equipment and precautions for firefighters

Use personal protective equipment as required.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions	Use personal protective equipment as required. Avoid contact with eyes. Wash thoroughly after handling.
For emergency responders	Use personal protective equipment as required.
<u>Environmental precautions</u>	Collect spillage. Do not allow into any sewer, on the ground or into any body of water.
<u>Methods and material for containment and cleaning up</u>	
Methods for containment	Prevent further leakage or spillage if safe to do so.
Methods for cleaning up	Soak up with inert absorbent material. Clean contaminated surface thoroughly.
Prevention of secondary hazards	Clean contaminated objects and areas thoroughly observing environmental regulations.

7. Handling and Storage

Precautions for safe handling

Advice on safe handling Use personal protective equipment as required. Use only in well-ventilated areas. Wash thoroughly after handling.

Conditions for safe storage, including any incompatibilities

Storage conditions Keep container tightly closed in a dry and well-ventilated place. Store at ambient conditions.

Incompatible materials Strong oxidizing agents. Strong acids.

8. Exposure Controls/Personal Protection

Control parameters

Exposure guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Zinc Oxide 1314-13-2	STEL: 10 mg/m ³ respirable fraction TWA: 2 mg/m ³ respirable fraction	TWA: 5 mg/m ³ fume TWA: 15 mg/m ³ total dust TWA: 5 mg/m ³ respirable fraction (vacated) TWA: 5 mg/m ³ fume (vacated) TWA: 10 mg/m ³ total dust (vacated) TWA: 5 mg/m ³ respirable fraction (vacated) STEL: 10 mg/m ³ fume	IDLH: 500 mg/m ³ Ceiling: 15 mg/m ³ dust TWA: 5 mg/m ³ dust and fume STEL: 10 mg/m ³ fume

Appropriate engineering controls

Engineering controls Ensure adequate ventilation, especially in confined areas.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles).

Skin and body protection Wear protective gloves and protective clothing.

Respiratory protection In case of insufficient ventilation, wear suitable respiratory equipment.

General hygiene considerations Handle in accordance with good industrial hygiene and safety practice.

9. Physical and Chemical Properties

Information on basic physical and chemical properties

Physical state	Liquid	Odor	Characteristic
Appearance	Paste	Odor threshold	No information available
Color	White To Light brown		
Property	Values	Remarks •	
pH		No information available	
Melting point/freezing point		No information available	
Boiling point / boiling range	200 °C		
Flash point	100 °C	Cleveland Open Cup	
Evaporation rate		No information available	
Flammability (solid, gas)		No information available	
Flammability limit in air			
Upper flammability limit		No information available	
Lower flammability limit		No information available	
Vapor pressure		No information available	

Vapor density		No information available
Specific gravity	1.4-1.6 @ 25°C	
Water solubility	Insoluble in water	
Solubility in other solvents		No information available
Partition coefficient		No information available
Autoignition temperature		No information available
Decomposition temperature		No information available
Kinematic viscosity		No information available
Dynamic viscosity	50000-250000 cPs	@ 25 °C
Explosive properties		No information available
Oxidizing properties		No information available
Other Information		
Softening point	No information available	
Molecular weight	No information available	
VOC content (%)	No information available	
Density	No information available	
Bulk density	No information available	

10. Stability and Reactivity

Reactivity

No data available

Chemical stability

Stable under normal conditions.

Possibility of hazardous reactions

None under normal processing.

Hazardous polymerization

Hazardous polymerization does not occur.

Conditions to avoid

None known.

Incompatible materials

Strong oxidizing agents. Strong acids.

Hazardous decomposition products

None under normal use conditions.

11. Toxicological Information

Information on likely routes of exposure

Product information

Inhalation	No data available.
Eye contact	No data available.
Skin contact	No data available.
Ingestion	No data available.

Component information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Zinc Oxide 1314-13-2	> 5000 mg/kg (Rat)	>2000 mg/kg (Rat)	-

Information on toxicological effects

Symptoms No information available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation No information available.
Serious eye damage/eye irritation No information available.
Irritation No information available.
Corrosivity No information available.
Sensitization No information available.
Germ cell mutagenicity No information available.
Carcinogenicity This product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP.
Reproductive toxicity No information available.
STOT - single exposure No information available.
STOT - repeated exposure No information available.
Aspiration hazard No information available.

12. Ecological Information

Ecotoxicity

Very toxic to aquatic life with long lasting effects

Chemical Name	Algae/aquatic plants	Fish	Toxicity to Microorganisms	Crustacea
Zinc Oxide 1314-13-2	IC50 (72h) <1mg/l	LC50 (96h) <1mg/l		

Persistence and degradability

No information available.

Bioaccumulation

No information available.

Other adverse effects

No information available

13. Disposal Considerations

Waste treatment methods

Disposal of wastes Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated packaging Disposal should be in accordance with applicable regional, national and local laws and regulations.

This product contains one or more substances that are listed with the State of California as a hazardous waste.

Chemical Name	California Hazardous Waste Status
Zinc Oxide 1314-13-2	Toxic

14. Transport Information

Note: For single packaging and combination packaging containing inner packaging with dangerous goods > 5L for liquids or > 5kg for solids:

DOT

Proper shipping name	3082 - Environmentally hazardous substances, liquid, n.o.s (Zinc Oxide)
Hazard class	9
Packing group	III

ICAO (air)

UN/ID no	3082
Proper shipping name	3082 - Environmentally hazardous substances, liquid, n.o.s (Zinc Oxide)
Hazard class	9
Packing group	III

IATA

UN/ID no	3082
Proper shipping name	3082 - Environmentally hazardous substances, liquid, n.o.s (Zinc Oxide)
Hazard class	9
Packing group	III

IMDG

UN/ID no	3082
Proper shipping name	3082 - Environmentally hazardous substances, liquid, n.o.s (Zinc Oxide)
Hazard class	9
Packing group	III
Marine pollutant	This product contains a chemical which is listed as a marine pollutant according to IMDG/IMO

RID

UN/ID no	3082
Proper shipping name	3082 - Environmentally hazardous substances, liquid, n.o.s (Zinc Oxide)
Hazard class	9
Packing group	III

ADR

UN/ID no	3082
Proper shipping name	3082 - Environmentally hazardous substances, liquid, n.o.s (Zinc Oxide)
Hazard class	9
Packing group	III

15. Regulatory information

International inventories

TSCA	Complies
DSL/NDSL	Complies
EINECS/ELINCS	Complies
ENCS	Not Determined
IECSC	Complies
KECL	Complies
PICCS	Complies
AICS	Complies

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances

US Federal Regulations**SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

SARA 311/312 Hazard Categories

Acute Health Hazard	No
Chronic Health Hazard	No
Fire Hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

CWA (Clean Water Act)

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Zinc Oxide 1314-13-2		X		

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

US State Regulations**California Proposition 65**

This product does not contain any Proposition 65 chemicals

U.S. State Right-to-Know Regulations

This product may contain substances regulated by state right-to-know regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Zinc Oxide 1314-13-2	X	X	X

16. Other information

<u>NFPA</u>	Health Hazards 0	flammability 1	Instability 0	Physical and chemical properties - PERSONAL PROTECTION C
<u>HMIS</u>	Health Hazards 0	flammability 1	Physical Hazards 0	

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Disclaimer

The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet