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Safety Data Sheet
Zinc Oxide

Section 1: Identification

Product identifier

Product Name	Zinc Oxide
Synonyms	ZINKOXID, OXYDE DE ZINC, OSSIDO DI ZINCO, ZINKOXIDE, ZINK OXID, OXIDO DEL CINC, TLENED CYNKU
Product Code	ZO356, ZO356T, ZINCOX, ZINCOXUSP
CAS Number:	1314-13-2
EINECS Number:	215-222-5
Reach Registration:	01-2119463881-32-0075 (Tonnage Band >1000 t/yr)
Relevant identified uses of the substance or mixture and uses advised against	
Recommended use	None specified
Use Restrictions:	None specified
Detail of the supplier of the safety data sheet	
Manufacturer	More than one manufacturers available
Supplier/ Distributor	Chemical Store Inc. 1059 Main Avenue, Clifton, NJ 07011 Tel: 1(973)405-6248 Website: ChemicalStore.com Email: info@ChemicaStore.com
Emergency Telephone Number	+1 (973) 420 – 4972 (United States)

Section 2: Hazards Identification

Classification of the substance or mixture

U.S.A.: Not Regulated

EEA member countries: Regulated

Classification according to Regulation (EC) No 1272/2008 [CLP]

Aquatic Acute 1: H400
Aquatic Chronic 1, H410

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Classification according to Directive 67/548/EEC

Dangerous for the environment; N; R50-53

Additional Information

For full text of R-phrases and Hazard- and EU Hazard-statements: see Section 16.

GHS Labeling

Zinc Oxide. Signal word: Warning.

Signal Word and Pictograms	
Hazard statements	H410: Very toxic to aquatic life with long lasting effects. P273: Avoid release to the environment.
Precautionary statements	P391: Collect spillage. P501: Dispose of contents/container as hazardous or special waste in accordance with applicable law.
Prevention	
Response	Specific treatment, see supplemental first aid information. - P321
Storage/Disposal	
Other hazards OSHA HCS 2012	

Section 3: Composition/ Information on ingredients

Substances

Component Name	CAS#	EC#	% Composition	Type
Zinc Oxide (ZnO)	1314-13-2	215-222-5	95%-100%	Main
Lead (PbO)			<0.15%*	Impurity
Cadmium (CdO)			<0.25%*	Impurity

Note: all other constituents are found at trace levels or are not regulated. See individual product specifications for specific composition limits.

*- All grades are below these values but some have lower limits

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Section 4: First Aid Measures

Description of first aid measures

Inhalation	Remove victim to fresh air. Seek medical attention if feeling unwell or experiencing respiratory distress
Skin	Immediately wash with soap and water. Seek medical attention if irritation occurs.
Eye	Immediately flush eyes with plenty of water. Get medical attention if irritation occurs.
Ingestion	Drink plenty of water. Do not induce vomiting. Seek medical attention or contact Poison Control.

Most important symptoms and effects, both acute and delayed

Acute: Dry cough, headache, throat irritation

Delayed: No delayed symptoms or effects expected

Indication of any immediate medical attention and special treatment needed

Bad cough, headache, and/or nausea. Move effected individual to fresh air.

Section 5: Fire Fighting Measures

Extinguishing Media

Suitable Extinguishing Media	Use an extinguishing media suitable for the surrounding fire
Unsuitable Extinguishing media	None Known

Special hazards arising from the substance or mixture

Hazards from the substance	Water contaminated with this material must be contained and prevented from being discharged to environment
Hazardous thermal decomposition products	Decomposition products may include Zinc Oxide fumes at high temperatures

Advice for fire-fighters

Special protective actions for fire-fighters	No special measures required
Special protective equipment for fire-fighters	Suitable breathing apparatus

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Section 6: Accidental Release Measures

Personal Precautions

Avoid breathing dust. Refer to Section 7 and Section 8 for advice on handling/storage and PPE

Environmental Precautions

Prevent contamination of soil, drains, and surface water. Inform relevant authorities of spill where required.

Spill Cleanup Recommendation

Avoid dry sweeping or other methods which raise dust. Vacuum or wet-sweep and place into a suitable closable, labeled container for disposal. Dispose of waste via licensed waste disposal contractor.

Section 7: Handling and Storage

Precautions for Safe Handling

This product should be used in accordance with good industrial safety practices and industrial hygiene standards and all local, state, federal, and international regulations. Avoid creating airborne dust. Ensure adequate exhaust ventilation. Workers who handle material should wear gloves and thoroughly wash hands/forearms after exposure. See Section 8.2 if exposure exceeds limits.

Conditions for Safe Storage/Instabilities

This product should be stored in accordance with all local, state, federal and international regulations. Store in a cool, dry, well-ventilated space sealed tightly in the original containers. Protect containers from damage and repair if damage occurs. Use all product within their recommended shelf life.

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Section 8: Exposure Control/ Personal Protection

Control Parameters

Product/Ingredient Name	8 Hour- TWA (mg/m^3)	15 min-STEL (mg/m^3)	References
USA	5 (Fumes) 10 (Dust)	10 (fumes)	ACGIH (1991) (guidance values)
USA	5 (Fumes) 15 (Dust; total) 5 (Dust; respirable)		OSHA (1989) (legal limit values)
The Netherlands	5 (Fumes)		SZW (1997)
Germany	5 (Fumes) 6 (Dust)		DFG (1997)
UK	5 (Fumes) 10 (Dust)		HSE (1998)
Sweden	5 (Fumes)		National Board of Occupation Safety and Health, Sweden (1993)
Denmark	4 (Fumes) 10 (Dust)		Arbejdstilsynet (1992)

Exposure Controls

Respiratory Protection	Avoid creating dust. If exposure levels exceed limits, respiratory protection approved for the work being performed must be worn.
Hand Protection	Always wear glove approved for the work being performed when handling Zinc Oxide.
Skin Protection	Wear normal chemical work clothing.
Eye Protection	Always wear approved protective eyewear if there is a potential for dust being created while handling the material.
General Protective Hygiene Measures	Use local exhaust ventilation to pro-actively reduce dust levels.

Other

Route(s) of entry	Inhalation and mechanical irritation of eyes and skin
Carcinogen Status	Not a NTP/IARC carcinogen
Signs and symptoms of exposure	Dry throat, cough, and dry itchy skin
Notes	Excess bulk exposure may cause acute respiratory irritation or dry skin

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Section 9: Physical and Chemical Properties

Information on basic physical and chemical properties

Material Description			
Physical Form		**Appearance/Description**	White, cream, or yellow
Color		**Odor**	Odorless
Taste		**Particulate Type**	
Particulate Size	d50 typically 1 um	**Aerosol Type**	
Odor Threshold	Odorless	**Physical and Chemical Properties**	
General Properties			
Boiling Point	n/a	**Melting Point**	1975 °C
Decomposition Temperature		**Heat of Decomposition**	
pH	Neutral	**Specific Gravity/Relative Density**	5.68
Density		**Bulk Density**	Varies
Water Solubility	2.9 mg/L	**Solvent Solubility**	Acids and bases
Viscosity		**Explosive Properties**	
Oxidizing Properties:		**Molecular Weight**	81.38
Volatility			
Vapor Pressure	@1500C = 12 mm HG	**Vapor Density**	n/a
Evaporation Rate	n/a	**VOC (Wt.)**	
VOC (Vol.)		**Volatiles (Wt.)**	0.3% nominal
Volatiles (Vol.)			
Flammability			
Flash Point	ZnO is not flammable	**Upper Explosive Limit**	
Lower Explosive Limit	ZnO is not explosive	**Autoignition**	Does not ignite
Self-Accelerating Decomposition Temperature (SADT)		**Heat of Combustion (ΔHc)**	
Burning Time		**Flame Duration**	
Flame Height		**Flame Extension**	
Ignition Distance		**Flammability (solid, gas)**	Not flamable
Environmental			
Half-Life		**Octanol/Water Partition coefficient**	
Coefficient of water/oil distribution		**Bioaccumulation Factor**	
Bioconcentration Factor		**Biochemical Oxygen Demand BOD/BOD5**	
Chemical Oxygen Demand		**Persistence**	
Degradation			

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Section 10: Stability and Reactivity

Reactivity	Stable under normal, dry conditions
Chemical stability	This product is stable
Possibility of hazardous reactions	None
Conditions to avoid or incompatible materials	Heated magnesium. Chlorinated rubbers above 215C
Hazardous decomposition products	Potential for ZnO fumes at elevated temperatures

Section 11: Toxicological Information

Information on toxicological effects

Routes of Entry	Oral, Inhalation
Acute Toxicity	LD_{50}(rat, Inhalation): 7,950 mg/kg (Encyclopedia of Toxicology: Reference Book 2005)
Chronic Toxicity	NOAEL: 50 mg/day (based on human clinical studies)
Mutagenicity	No data available
Carcinogenicity	No data available. Not listed as an IARC Carcinogen. Not listed in the NTP report on carcinogens.

Acute Exposure Symptoms

Eye Contact	Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the eyes.
Inhalation	Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the respiratory tract
Skin Contact	No known significant effects or critical hazards
Ingestion	No known significant effects or critical hazards

Sources for section 11: PubChem (NIH), ECHA (EU REACH dossiers), NIOSH Pocket Guide, EPA IRIS, OECD SIDS, ATSDR Toxicological Profiles

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Section 12: Ecological Information

Toxicity

Product Name	Result	Species	Dose	Exposure	Reference
Zinc Oxide	LC50 Inhalation Dusts and mists	Rat	>5.7mg/L	4 Hours	Klimisch and Freisberg (1982)
Zinc Oxide	LD50 Oral	Rat	15000 mg/kg	N/A	Löser (1972)
Zinc Oxide	LD50 Oral	Rat	>5000 mg/kg	N/A	Löser (1977)

Persistence and degradability

Not rapidly degradable

Bioaccumulative potential

No evidence to indicate significant bioaccumulative potential

Mobility in soil

No evidence to indicate significant mobility in soil

Results of PBT and vPvB assessment

ZnO is not PBT or vPvB.

Other adverse effects

None

Section 13: Disposal Considerations

Waste treatment methods

Product

Generation of product waste should be minimized wherever possible. Disposal of product, solutions, and any by-products should comply with the requirements of environmental protection and waste disposal legislation and any regional or local authority requirements. Dispose of surplus and non-recyclable products via licensed waste disposal contractor. Waste should not be released into sewer system unless regulations permit such release

Containers/Packaging

Generation of packaging waste should be minimized wherever possible. Waste packaging should be recycled when possible. Incineration and/or landfill dumping should only be considered when recycling isn't feasible. Make sure to follow all local, state, federal, and international regulations when disposing of packaging materials.

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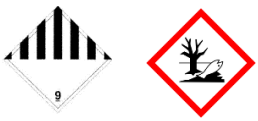
Section 14: Transport Information

US Information

NAFTA Tariff Class	2817.00.0000, Sched. B.
Country of Origin	U.S.A.
Responsible party	U.S. Zinc, Houston Texas USA
Classification code	M7 (Formerly: Item Number 12C)
Hazard identification/reconnaissance #	90
NMFC Class	55

USDOT Information	This material is not regulated

EU Information

	ADR/RID	IMDG	IATA
14.2.1 UN Number	UN3077	UN3077	UN3077
14.2.2 UN proper Shipping Name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (ZINC OXIDE)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (ZINC OXIDE), MARINE POLLUTANT (ZINC OXIDE)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (ZINC OXIDE)
14.2.3 Transport hazard Class(es)			
	Hazard Identification Number: 90	Sea (IMO): DG, MP	IATA Label: Miscellaneous
14.2.4 Packing Group	III	III	III
14.2.5 Environmental Hazards	Yes	Yes, Dangerous to the environment	Yes
14.2.6 Special precautions for users	No	No	Yes (see below)
Additional Information	Tunnel code (E)		
IATA special precautions for users		IATA- Passenger Aircraft:	400kg (packing group 956)
		IATA- Passenger Aircraft:	30kg (packing group Y956)
		IATA- Cargo Aircraft:	400kg (packing group 956)
		IATA-S.P.:	A97, A158, A179

*The EU diamond for Dangerous to the Environment has a red border. A copy of this document may not be in color resulting in the above border incorrectly being displayed in black.

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Section 15: Regulatory Information

1.1 EEA

This SDS complies with GHS-CLP, and EEA/EUI REACH, and SDS rules

1.2 TSCA Equivalent 'inventory' regulations

AICS	Yes
SWISS	Yes
PICCS	Yes
DSL	Yes
NDSL	No
ASIA-PAC	Yes
EINECS	Yes, on inventory
ELINCS	No, notification/reporting not required

USDOT	Not Transport regulated, 49CFR172
SARA 302	Yes, name listed (Zinc). RQ= None, TPQ= None
SARA311/312	Yes, acute hazard, 29CFR1200
SARA313	Yes, Zn & Pb compounds
CA Prop.65	Yes, Pb & Cd
CAA 112, 61 HAP	No, not regulated, no HAP's
FIFRA 152 et seq.	No (product is not subject to FIFRA)
CERCLA 102/103	Name List, RQ=None
NSF 60/61	Submitted NSF, UL
FCC	Listed
CONEG	Compliant
ODS/ODC 82	No
TSCA	Yes, on Inventory, Compliant with TSCA, Notification not required
RCRA 261	If governing spec is >1000 ppm Pb or >20 ppm Cd, product must be TCLP tested for Pb and Cd to determine if waste product is subject to RCRA
USFDA	Listed as GRAS at 21CRF182.8991

EU REACH Information

Product Origin	01-2119463881-32-0075 (Tonnage >1000 t/year)
P.R.C. Pre-Registration #	05-2114620034-66-0000
Brazil Pre-Registration #	05-2114626885-37-0000

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Section 16: Other Information

Revision date: none
Initial preparation date: 2026-06-10
SDS version: 1.0
Supersedes: [No previous version number]

Change History

Version	Date	Description of Change
[1.0]	[2026-06-10]	Initial SDS creation
[1.1]	[YYYY-MM-DD]	[e.g., Updated hazard classification / Added toxicology data / Editorial corrections]

Abbreviations and Acronyms

Term	Meaning
GHS	Globally Harmonized System of Classification and Labelling of Chemicals
OSHA	Occupational Safety and Health Administration
ACGIH	American Conference of Governmental Industrial Hygienists
NIOSH	National Institute for Occupational Safety and Health
TWA	Time-Weighted Average
STEL	Short-Term Exposure Limit
LC50	Lethal Concentration 50%
LD50	Lethal Dose 50%
PBT	Persistent, Bioaccumulative, Toxic
vPvB	very Persistent and very Bioaccumulative

[Add additional abbreviations used in this SDS]

Key Literature and Data Sources

This Safety Data Sheet was prepared using information from the following sources:

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- [ECHA / REACH database]
- [NIOSH Pocket Guide]
- [PubChem / NIH]
- [OECD test data]
- [Supplier technical data sheets]
- [Scientific literature]

Disclaimer

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