



Zinc oxide

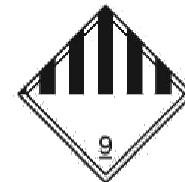
Date reviewed: Dec. 2022
Version 04

Use of the substance/ preparation

Agribusiness | Other industrial uses

Company name

Industrias emu s.a.s



1. **Product and identification of the company**
- Synonyms:** Chinese white, zinc white, zinc flowers, calamine.
N° CAS: 1314-13-2
Molecular weight: 81,41 g/mol
Chemical formula: ZnO

Concentrations: 70% Zn, 72% Zn, 80% Zn, 80.26% Zn

Company name

Company: Industrias emu s.a.s.

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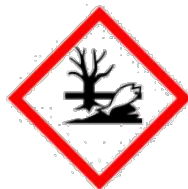
(+57) 301 250 53 53

2. **Hazard identification**
- Classification of substance or mixture:**

Acute aquatic toxicity, Category 1, H400 Chronic aquatic toxicity, Category 1, H410

Label elements

Hazard pictograms



Word of warning

Attention

Danger indications

H410 Very toxic to aquatic organisms, with lasting harmful effects.

Precautionary statements

Preventing

P273 Avoid its release to the environment.

Intervention

P391 Collect the spills.

P501 Remove contents/container from



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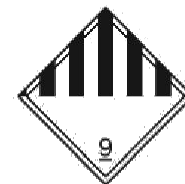
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Other dangers

None known.

3. Composition Substance

Information on the components

Chemical Name	Zinc oxide
Chemical formula	ZnO
Concentration	70% Zn, 72% Zn, 80% Zn, 80.26% Zn
N°. CAS	1314-13-2
N°. CE	215-222-5

Dangerous components

Acute aquatic toxicity, Category 1, H400
Chronic aquatic toxicity, Category 1, H410
M-factor: 1

4. First aid measures Description of the first aid

Inhalation of material can be harmful

After inhalation: fresh air. If the patient is unconscious, but breathing, lay him on his side. Take the doctor.

Contact can cause skin and eye burns

In case of skin contact: remove immediately all contaminated garments. Rinse skin with water/shower for at least 20 minutes.

After eye contact: rinse the affected eye for 10 minutes with running water. Consult the ophthalmologist.

After ingestion: rinse mouth and spit out liquids. Make the patient drink immediately a glass of water.

Do not induce vomiting.

In case of spontaneous vomiting, keep the patient face down with the head lower than the chest to effectively prevent vomiting from entering the respiratory tract. Take to the doctor

Main symptoms and effects, acute and delayed

Irritating effects, conjunctivitis, stomach pain, diarrhea, vomiting, collapse, death, risk of turbidity in the cornea.

Indication of medical care and special treatment to be provided immediately

Make sure medical personnel are aware of the materials involved and take precautions to protect themselves.



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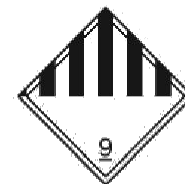
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Check if first responders have rinsed their eyes after contact with the substance, otherwise this must be done.
In all cases: the patient should be treated by an ophthalmologist.
Check if first responders have rinsed the skin after contact with the substance, otherwise this must be done.
After inhalation of substances: severe fever of metal fumes requires the application of an antipyretic.
Do not induce vomiting. Severe abdominal pain requires an endoscopic examination of the stomach and duodenum for clarification of local changes of mucous membranes.

5.

Fire means of extinction

The substance is non-combustible. Select the fire extinguishing measures according to the surrounding conditions.

Small fire

Dry chemical powder, CO₂, water spray or regular foam.

Big fire

Use water spray, fog or regular foam.

Do not disperse spilled material with high pressure water jets.

Move containers from the fire area if you can safely do so.

Make a containment dam for water controlling fire for its waste posterior.

Specific hazards arising from the substance or mixture

Non-fuel: non-combustible substances do not ignite themselves, but they can react by heating and producing toxic fumes.

Recommendations for fire fighting personnel

Special protective equipment for fire-fighting personnel.

Use self-contained positive pressure air (SCBA) equipment.

The suit for professional firefighters will provide limited protection.

Stay in the risk area only with artificial respiration systems and independent of the environment.

Other information

Repress gases/vapours/mists with powdered water. Prevent pollution surface water or groundwater with water that has served the extinction fire.

6.

Accidental dumping measures Personal precautions

Do not touch or walk on spilled material.

Stop the spill, if you can safely do so.

Prevent the dust cloud.



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Small spill

With a clean shovel place the material in a clean and dry container and cover loosely; remove containers from the spill area.

Big spill

Mark the area with a signalling tape.
Cover the dust spill with a plastic sheet or tarp to minimize your spreading.
Prevent entry into waterways, sewers, basements or areas confined.

Reference to other sections

For details on waste treatment, see *Section 13*.

7. Handling and storage Precautions for safe handling

Tips for safe handling

Observe the indications on the label.

Hygiene measures

Replace the contaminated clothing. Wash hands after work.

Safe storage conditions, including possible incompatibilities

Storage conditions

Do not use any food containers.
Packaging must be clearly and permanently labelled.
Store in the original container as much as possible.
Keep the container tightly closed.
Store in a dry place.
Store aerated and fresh.

For possible incompatibilities see *section 10*.

8. Controls of exposure and personal protection Control parameters

Zinc oxide (1314-13-2)

CO OEL

Short Exposure Limit (LEB): 10 mg/m³

Form of exposure: respirable fraction.

Time Weighted Average (TWA) 2 mg/m³

Form of exposure: respirable fraction.



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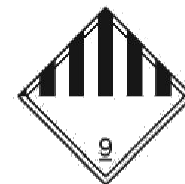
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Exposure controls

Ventilation system

A local and/or general exhaust aeration system is recommended to keep employee exposures below exposure limits. Local exhaust ventilation is generally preferred because emissions of the pollutant at its source can be controlled, preventing its dispersion in the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Best Practice Manual, latest edition, for details.*

Personal Respirators (NIOSH Approved)

If the exposure limit is exceeded, a medium dust/fog mask particulate respirator shall be used if exposed 10 times above the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or the respirator provider. A full dust/fog mask particulate respirator shall be used if 50 times above the exposure limit or maximum use concentration specified by the appropriate regulatory agency or respirator provider is exposed. For emergencies or cases where exposure levels are not known, use a full positive pressure mask or self-contained respirator. **WARNING:** Self-contained respirators do not protect workers in oxygen-deficient atmospheres.

Skin protection

Submergence: Material of the glove: nitrile rubber
Thickness of the glove: 0,11 mm
Penetration time: >480 min

Splatter: Material of the glove: nitrile rubber
Thickness of the glove: 0,11 mm
Penetration time: >480 min

Eye protection

Wear protective chemical goggles. Keep an eye wash fountain and emergency showers in the work area.

Environmental exposure checks

Do not let the product enter the sewer system.

9. Physical and chemical properties

Way	Solid
Smell	Characteristic.
Color	White, can vary between gray and brown according to the concentration or origin of the raw material.

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Olfactory threshold	Not applicable
pH	Approx. 7 to 50 g/l 20 °C (wet paste)
Melting point	1.975 °C
Point/boiling interval	Not applicable, (sublimated)
Flash point	Does not swell
Evaporation rate	No information is available.
Flammability (solid, gas)	No information is available.
Explosion limit, lower	Not applicable
Limit of explosion, upper	Not applicable
Vapour pressure	No information is available.
Relative density of steam	No information is available.
Density	5.61 g/cm ³ to 20 °C
Relative density	No information is available.
Water solubility	0.0016 g/l to 29 °C
Distribution coefficient n-octanol/water	No information is available.
Auto-ignition temperature	No information is available.
Decomposition temperature	No information is available.
Dynamic viscosity	No information is available.
Explosive properties	Not classified/a as explosive/a.
Oxidising properties	None.

Other information

Ignition temperature	Non-fuel
Apparent density	Approx.200 - 700 kg/m ³

10. Stability and Reactivity

Stability and reactivity See "*Possibility of dangerous reactions*"

Chemical stability

The product is chemically stable under normal conditions (at room temperature).

Possibility of dangerous reactions

Possible violent reactions with: hydrogen peroxide/hydrogen peroxide, magnesium (heat), chlorinated rubber (rare), linseed oil (rare)

Conditions to be avoided

Information not available.

Incompatible materials

Information not available.

Dangerous decomposition products

Information not available.



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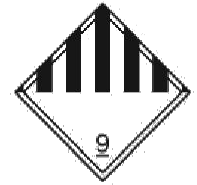
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11. Toxicological information

Information on toxicological effects

Acute oral toxicity

DL50 rata: > 5.000 mg/kg (IUCLID)

LDLO man: 500 mg/kg (RTECS)

Acute toxicity by inhalation

CL50 rata: $\geq 5 \text{ mg/m}^2$; 3 h (Literature)

Acute skin toxicity

This information is not available.

Skin irritation

Possible consequences: slight irritation

Eye irritation

Possible consequences: slight irritation

Sensitization

Human experience

Result: negative.

(IUCLID)

Mutagenicity in germ cells

In vitro genotoxicity

Mutagenicity (mammalian cell test):

Result: positive.

(IUCLID)

Ames test

Result: negative.

(IUCLID)

Carcinogenicity

This information is not available.

Reproductive toxicity

This information is not available.

Teratogenicity

This information is not available.

Specific toxicity to certain organs - single exposure This information is not available.

Specific toxicity to certain organs - repeated exposures This information is not available.

Aspiration hazard

This information is not available.



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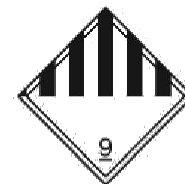
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Other information

For zinc compounds in general:

Little absorbed by the gastrointestinal tract.

Astringent effect on the mucous membranes.

Metal vapor fever after inhalation of large amounts.

Handle with proper industrial hygiene precautions and respect safety practices.

12.

Ecological information

Toxicity

Toxicity to fish

CL50 *Oncorhynchus mykiss* (Irised trout): 1.1 mg/l; 96 h (Data base ECOTOX)

Toxicity to Daphnias and other aquatic invertebrates

CE50 *Daphnia magna* (Big sea flea): > 1000 mg/l; 48 h (Data base ECOTOX)

Algae toxicity

IC50 *Pseudokirchneriella subcapitata* (alga verde): 0,17 mg/l; 72 h (External Safety Data Sheet)

Persistence and degradability

Biodegradability

Methods for the determination of biological degradability are not applicable for inorganic substances.

Bioaccumulation potential

No information is available.

Floor mobility

No information is available.

Results of the PBT and MPMB assessment

A PBT and MPMB assessment was not made, due to the fact that a chemical hazard assessment is not necessary or does not exist.

Other adverse effects

Discharge into the environment should be avoided.

13. Disposition considerations

According to Resolution 1704 of 2018, the final disposition of this packaging must be made with a hazardous waste manager.

Any amount that cannot be saved by recovery or recycling must be handled at an appropriate and approved waste disposal facility. The processing, use or contamination of this product can change waste management options.

Departmental disposal regulations may differ from national disposal regulations.

Discard the container and do not use the residue.



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14. Transport information

Trucking

United Nations official transport designation

Solid substance dangerous to the environment, N.E.P. (Zinc oxide)

N°UN/ID

3077

Danger class

9

Packing group

III

Instructions for packaging/ packaging

P002, IBC08, LP02*

Special packaging/packaging requirements

PP12, B3 *

Environmentally dangerous

Yes

Special precautions for users

Yes

*For further information please refer to the United Nations Orange Book section 4.1.4

Air transport (IATA)

Official designation of transport of United Nations

Solid substance dangerous to the environment, N.E.P. (Zinc oxide)

N°UN/ID

3077

Danger class

9

Packing group

III

Environmentally dangerous

Yes

Special precautions for the users

Not

Maritime transport (IMDG)

Official designation of transport of United Nations

Solid substance dangerous to the environment, N.E.P. (Zinc oxide)



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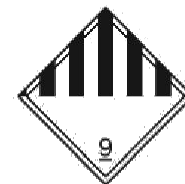
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N°UN/ID	3077
Danger class	9
Packing group	III
Environmentally dangerous	Yes
Special precautions for the users	Yes

15. Regulatory information

Chemical Inventory Status - Part 1

Ingrediente	TSCA	EC	Japan	Australia
Zinc oxide (1314-13-2)	Yes	Yes	Yes	Yes

Chemical Inventory Status - Part 2

		Canada		
Ingrediente	Korea	DSL	NDSL	Phil
Zinc oxide (1314-13-2)	Yes	Yes	Not	Yes

Federal, State and International Regulations - Part 1

	SARA 302		SARA 313	
Ingrediente	RQ	TPQ	List	Cat.Chemical
Zinc oxide (1314-13-2)	Not	Not	No	Componentes de Zinc

Federal, State and International Regulations - Part 2

		RCRA	TSCA
Ingrediente	CERCLA	261.33	8 (d)
Zinc oxide (1314-13-2)	Not	Not	Not

Chemical Weapons Conversion: No | **TSCA 12 (b):** No | **CDTA:** No
SARA 311/312:Acute: Yes | **Chronic:** No | **Flammability:** No | **Pressure:** No
Reactivity: No (Pure / Solid)

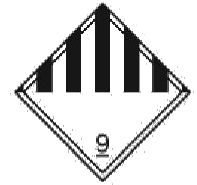
Australian Hazchem Code: None assigned.

Poison phrase: None assigned.

WHMIS: This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

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16. Other information

Advice relating to training

Workers must be provided with adequate information and practical training.

Transport labelling

Danger level 9



Special labelling



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