



Zinc Oxide

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product Identifier

Product Name	Zinc Oxide
Commercial name	white zinc, zinc oxide
Code	G2583
CAS No.	1314-13-2
EINECS No.	215-222-5

1.2 Details of the supplier of the safety data sheet

Supplier/Distributor	zielonyklub.pl
Company	Greenaction Sp. z o.o., ul. Śniadeckich 31, 25-366 Kielce, NIP: PL6571011247
Contact	tech@zielonyklub.pl

1.3 Details of the supplier of the safety data sheet

Emergency Contact	112 (emergency), 998 (fire), 999 (ambulance), 42 631 47 24 (toxicological information in Poland)
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1.4 Relevant identified uses of the substance or mixture and uses advised against

Used for production of rubber products, paints and lacquers, ceramic, pharmaceutical and cosmetics, electronic product, as well as protection from high voltage.


SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (EU 1272/2008)	Physical and chemical parameters – not classified Health hazards – not classified Environmental hazards – substances or mixtures implying hazards for aqueous environment – severe risk, category 1. Factor M – 1.
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2.2 Label elements

Label in accordance with Regulation (EC) No 1272/2008

Signal word:	Danger
Hazard Statements:	H410 - Very toxic for aqueous organisms, causing long-lasting effects.
Precautionary Statements:	P273 Avoid dumping to the environment. P391 Collect the spill. P501 Contents/container to be disposed in accordance with the local waste management regulations. To be treated as dangerous waste.
Pictograms:	

2.3 Other hazards

Unknown

SECTION 3: Composition/information on ingredients

3.1 Substances

Name	Chemical formula	CAS	EINECS	Molar mass	Concentration
Zinc oxide	ZnO	1314-13-2	215-222-5	81.37 g/mol	100%

3.2 Mixtures

N/A



Zinc Oxide

SECTION 4: First aid measures

4.1 Description of first aid measures

General information	Take off the contaminated clothing and shoes, and cleanse thoroughly before using again.
Ingestion	Rinse out mouthd then drink water. In case of any ailment after swallowing call a doctor.
Skin Contact	Wash the contaminated area with water and soap.
Eye Contact	Rinse opened eye for several minutes under running water. In case of irritation consult a doctor.
Inhalation	Supply fresh air, consult doctor in case of complaints.

4.2 Most important symptoms and effects, both acute and delayed

After swallowing a significant quantity, there will be symptoms similar to those of flu, with a high temperature and muscle shivering. The effects usually disappear after two days, when the organisms has eliminated the substance.

4.3 Indication of any immediate medical attention and special treatment needed

No further relevant information available.

SECTION 5: Fire fighting measures

5.1 Extinguishing Media

Extinguishing media:	Recommended extinguishing media: sprayed water, foam, carbon dioxide (CO ₂), dry extinguishing media, neutral powder extinguisher (depending on materials stored nearby)
Unsuitable extinguishing media	Do not use pressurized water jet to extinguish fire in case of dusty products.

5.2 Special hazards arising from the substance or mixture.

None. Non-flammable substance.

5.3 Advice for fire-fighters

In case of fire use insulating respiratory apparatus while extinguishing the fire. Wear a complete protective suit.

SECTION 6: Accidental release measures

6.1 Personal precautions

Prevent forming of dust; do not inhale dust; prevent contamination with the substance.

6.2 Environmental precautions

Do not permit release to sewage, surface waters or soil.

6.3 Methods and material for containment and cleaning up

In order to avoid dusting, collect the substance using a moist or absorbing material. Transport the substance in appropriate containers.

6.4 References to other sections.

See Section 13 for disposal information.

SECTION 7: Handling and Storage

7.1 Precautions for safe handling

Always read the information in the label. Use safety measures to comply with the legally determined limit values of zinc concentration in the air (NDS) – ventilation, extractors.

7.2 Conditions for safe storage, including any incompatibilities

Store in dry, roofed premises at the room temperature, in originally sealed containers.

7.3 Specific end use(s)

N/A



Zinc Oxide

SECTION 8: Exposure controls/personal protection

8.1 Control Parameters

List of approved workplace exposure limits (WELs)/EH40	-Total inhalable dust: TLV-TWA 10 mg/m ³ - Respirable dust: TLV-STEL 2 mg/m ³	
Limits DNELs	Oral	DNEL _{oral soluble Zn} = 50 mg/day (i.e., 0.83 mg/kg bw/day); DNEL _{oral insoluble Zn} = 50 mg/day (i.e., 0.83 mg/kg bw/day);
	Dermal	DNEL _{dermal soluble Zn} = 500 mg/day (i.e., 8.3 mg/kg bw/day); DNEL _{dermal insoluble Zn} = 5000 mg/day (i.e., 83 mg/kg bw/day);
	Inhalation - Worker	DNEL _{inhal soluble Zn} (worker) = 1 mg/m ³ ; DNEL _{inhal insoluble Zn} (worker) = 5 mg/m ³ ;
	Inhalation - Consumer	DNEL _{inhal soluble Zn (consumer)} = 1.3 mg/m ³ ; DNEL _{inhal insoluble Zn (consumer)} = 2.5 mg/m ³ ;

8.2 Exposure Controls

Eye protection	Wear safety glasses, where eye exposure is reasonably possible.
Hand protection	Wear suitable protective gloves, of leather, cotton, rubber, to avoid risks of skin contact.
Respiratory Equipment	No specific protective measures are suggested, but in exceptional cases, that is when high atmospheric pollution occurs, they can be required. In this case, wear a mask provided with dust filter P2.
Hygiene Measures	Keep adequate ventilation general. Do not eat, drink or smoke in areas where this material is handled, stored and processed.
Environmental Exposure Controls	<p>Technical conditions and measures at process level (source) to prevent release:</p> <ul style="list-style-type: none"> • Process enclosures and closed circuits where relevant and possible. • Local exhaust ventilation on furnaces and other work areas with potential dust generation, dust capturing and removal techniques • Containment of liquid volumes in sumps to collect/prevent accidental spillage, acid solutions are treated with alkali. There is high temperature in the surroundings of the calcinations furnaces. <p>Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil</p> <ul style="list-style-type: none"> • On-site waste water treatment techniques can be applied to prevent releases to water (if applicable) e.g.: chemical precipitation, sedimentation and filtration (efficiency 90-99.98%). • Containment of liquid volumes in sumps to collect/prevent accidental spillage. • Air emissions are controlled by use of bag-house filters and/or other air emission abatement devices e.g. fabric (or bag) filters (up to 99% efficiency), wet scrubbers (50-99% efficiency). This may create a general negative pressure in the building. <p>Organizational measures to prevent/limit release from site</p> <ul style="list-style-type: none"> • In general emissions are controlled and prevented by implementing an integrated management system e.g. ISO 9000, ISO 1400X series, or alike, and, when applicable, by being IPPC-compliant. <p>Such management system should include general industrial hygiene practice e.g.:</p> <ul style="list-style-type: none"> • information and training of workers, • regular cleaning of equipment and floors, • procedures for process control and maintenance. <p>Treatment and monitoring of releases to outside air, and exhaust gas streams (process & hygiene), according to national regulation.</p> <ul style="list-style-type: none"> • SEVESO 2 compliance, if applicable.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Form	Solid, dust
Colour	White or almost white
Odour	Odourless
Melting point	1970 – 1975 °C
Ignition point:	Not applicable
Combustion properties:	Not flammable
Explosive properties	Explosive safe product
Bulk density	300 – 2000 kg/m ³
Solubility:	Acids and bases
Density (20 °C):	5.6 g/cm ³
Solubility in water	(20°C) 0.0016 g/dm ³
pH (at 10 g/l H ₂ O)	(20°C) - 8



Zinc Oxide

SECTION 9: Physical and chemical properties

9.2 Other information

N/A

SECTION 10: Stability and reactivity

10.1 Reactivity

No reactivity in normal conditions.

10.2 Chemical stability

Stable under normal conditions of storage and use.

10.3 Possibility of hazardous reactions

No possibility of hazardous reactions if stored away from acids and bases.

10.4 Conditions to avoid

Avoid contact with acids and bases.

10.5 Incompatible materials

Acids and bases.

10.6 Hazardous decomposition products

No dangerous decomposition product under normal conditions of storage and use.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute Toxicity

Oral	LD50	>2000 mg/kg mc Rat
Dermal	LD50	>5.7 mg/l Rat
Inhalative	LOAEL (Lowest Observed Adverse Effect Level)	>5 mg/m ³ Humans
Skin corrosion/irritation	No irritant effect	
Serious eye damage/irritation	No irritant effect	
Respiratory	No irritant effect	
Sensitization	No sensitising effects known	
Germ cell mutagenicity	No biologically relevant genotoxic activity, (Chemical Safety report (CSR) zinc oxide. 2010).	
Carcinogenicity	No experimental or epidemiological evidence exists to justify classification of zinc compounds for carcinogenic activity (Chemical Safety report (CSR) zinc oxide. 2010).	
Reproduction toxicity	No experimental or epidemiological evidence exists to justify classification of zinc compounds for reproductive or developmental toxicity, (Chemical Safety report (CSR) zinc oxide. 2010).	
STOT-single exposure	No experimental or epidemiological sufficient evidence for specific target organ toxicity - single exposure (Heydon and Kagan, 1990; Gordon et al., 1992; Mueller and Seger, 1985). (Chemical Safety report (CSR) zinc oxide. 2010)).	
STOT-repeated exposure	No experimental or epidemiological sufficient evidence for specific target organ toxicity - repeated exposure (Lam et al, 1985, 1988; Conner et al., 1988). (Chemical Safety report (CSR) zinc oxide. 2010)).	
Practical information	Inhaling the dust may cause irritation of the respiratory system. Up to 25 mg of zinc is used in medicines. Gram quantities may lead to serious health problems. The „zinc fever“ quoted in the literature (foundry fever) occurs solely when ZnO is generated, and ZnO smoke (aerosol) appears. It is not caused by packed, commercial white zinc (ZnO).	

SECTION 12: Ecological information

12.1 Toxicity

ACUTE AQUATIC TOXICITY	EC50 (48h), pH < 7: 0.67 mg/l, Ceriodaphnia dubia EC50 (72h), pH > 7÷8.5: 0.21 mg/l, Selenastrum capricornutum
CHRONIC AQUATIC TOXICITY	Freshwater: 20.6 µg/l, saltwater: 6.1 µg/l.
SEDIMENT TOXICITY	Freshwater sediment PNEC _{bioav} : 235.6 mg/kg sediment dry weight Saltwater sediment PNEC _{bioav} : 113 mg/kg sediment dry weight.
SOIL TOXICITY	PNEC _{bioav} : 106.8 mg/kg (soil dry weight).
TOXICITY TO MICRO-ORGANISMS IN STP	52 µg/l



Zinc Oxide

SECTION 12: Ecological information

12.2 Persistence and degradability

No data

12.3 Bioaccumulation potential

Zinc and zinc compounds do not bioaccumulate or biomagnify. Zinc is a natural, essential element, which is needed for the optimal growth and development of all living organisms, including man. All living organisms have homeostasis mechanisms that actively regulate zinc uptake and absorption/excretion from the body.

12.4 Mobility in soil

No data

12.5 Results of PBT and VPOB assessment

No

12.6 Other adverse effects

None

SECTION 13: Disposal considerations

13.1 Waste Treatment Methods

Should be transported and handled in a special manner (dangerous product). Do not eliminate in an incinerating plant. Non-disposable containers may be used again once they have been completely emptied. Contaminated containers must be handled as dangerous waste.

SECTION 14: Transport information

Road transport/ADR/RID and GGVS/GGVE (abroad/domestic) ADR/RID-GGVS/E: UN 3077 Material dangerous for the environment, solid, i.n.o. Class 9 Classification code M7 Packaging group III Hazard reference number: 90 label 9 + „fish”



Sea transport: class 9 Packaging group III

Air transport ICAO-TI and IATA-DGR: class 9 UN/ID-Nr 3077 PG III

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

According to the quantity stored the substance is subject to the „Seveso” regulation. Directive 96/82/EC, Directive 2003/105/EC and Directive 2012/18/EU).

15.2 Chemical safety assessment

Within REACH Consortium Zinc (IZA-Europe), according to the requirements of the REACH Regulation (EC) No 1907/2006 for the registration of the product, was developed the Chemical Safety Report (CSR) from which have been drawn from the information contained in this safety data sheet.

SECTION 16: Other information

Disclaimer:

All the information in this leaflet is to the best of our knowledge. However, neither can we guarantee the accuracy of any of the information or data contained within. It is not, and should not be construed as, a guarantee or warranty, or a part of our contractual or other legal obligations. We assume no responsibility for any loss, damage or expense, direct or consequential arising out of the use of this product.

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