

SAFETY DATA SHEET

According to Regulation (EC) No 1907/2006 (REACH)

SECTION 1: Identification of the substance and of the company

1.1 Product identifiers

Product name: Zinc oxide

REACH No.: A registration number is not available for this substance as the annual tonnage does not require a registration.

EC No.: 215-222-5

CAS-No: 1314-13-2

Other names: ZnO

1.2 Relevant identified uses of the substance

Identified uses: Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

Nanomox Limited, The Royal Institution, 21 Albemarle St

London, United Kingdom, W1S 4BS

Email address: info@nanomox.net

Phone number: +44 (0) 7432 136276

1.4 Emergency telephone number: +44 (0) 7432 136276

SECTION 2: Hazards identification

2.1 Classification of the substance

Classification according to Regulation (EC) No 1272/2008 as amended by GB-CLP Regulation, UK SI 2019/720, and UK SI 2020/1567

Short-term (acute) aquatic hazard (Category 1), H400

Long-term (chronic) aquatic hazard (Category 1), H410

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 Label elements:

Labelling according to Regulation (EC) No 1272/2008 as amended by GB-CLP Regulation, UK SI 2019/720, and UK SI 2020/1567

Pictogram



Signal word

Warning

Hazard statement(s)

H410 Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)

P273 Avoid release to the environment.

P391 Collect spillage.

P501 Dispose of contents/ container to an approved waste disposal plant.

Supplemental Hazard Statements: none

Reduced Labeling (<= 125 ml)

Pictogram



Signal word Warning

Hazard statement(s)

None

Precautionary statement(s)

None

Supplemental Hazard Statements: none

2.3 Other hazards

This substance contains no components considered to be either persistent, bioaccumulative, or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

SECTION 3: Composition

3.1 Substance(s)

Formula: OZn
Molecular weight: 81.39 g/mol
CAS-No.: 1314-13-2
EC-No.: 215-222-5
Index-No.: 030-013-00-7

Component	Classification	Concentration
Zinc oxide	Aquatic Acute 1; Aquatic Chronic 1; H400, H410 M-Factor - Aquatic Acute: 1 M-Factor – Aquatic Chronic: 1	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

If inhaled

After inhalation: fresh air.

In case of skin contact

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower.

In case of eye contact

After eye contact: rinse out with plenty of water. Remove contact lenses.

If swallowed

After swallowing: make victim drink water (two glasses at most). Consult doctor if feeling unwell.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed

No data available

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

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

Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

5.2 Special hazards arising from the substance or mixture

Zinc/zinc oxides
Not combustible.
Ambient fire may liberate hazardous vapours.

5.3 Advice for firefighters

In the event of fire, wear self-contained breathing apparatus..

5.4 Further information

Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Avoid inhalation of dusts. Evacuate the danger area, observe emergency procedures, consult an expert. For personal protection see section 8.

6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up dry. Dispose of properly. Clean up affected area. Avoid generation of dusts.

6.4 Reference to other sections

For disposal see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

For precautions, see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Store in a cool place. Keep container tightly closed in a dry well-ventilated place.

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Components with workplace control parameters

Contains no substances with occupational exposure limit values.

8.2 Exposure controls

Personal protective equipment

Eye/face protection

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses.

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. The selected protective gloves have to satisfy the specifications of Regulation (EU) 2016/425 and the standard EN 374 derived from it.

Respiratory protection

required when dusts are generated.

Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

Recommended Filter type: Filter type P1

Control of environmental exposure

Do not let product enter drains.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

- | | |
|---------------------------------|------------------------------|
| a) Appearance | Form: powder. Colour: white. |
| b) Odour | none |
| c) Odour Threshold | No data available |
| d) pH | No data available |
| e) Melting point | > 1000°C |
| f) Initial boiling point | No data available |

- g) Flash point** No data available
- h) Evaporation rate** No data available
- i) Flammability (solid, gas)** No data available
- j) Upper/lower flammability or explosive limits** No data available
- k) Vapour pressure** No data available
- l) Vapour density** No data available
- m) Relative density** No data available
- n) Water solubility** No data available
- o) Partition coefficient: n-octanol/water** Not applicable for inorganic substances
- p) Auto-ignition temperature** No data available
- q) Decomposition temperature** No data available
- r) Viscosity** No data available
- s) Explosive properties** No data available
- t) Oxidizing properties** None

SECTION 10: Stability and reactivity

- 10.1 Reactivity**
No data available
- 10.2 Chemical stability**
Stable under recommended storage conditions.
- 10.3 Possibility of hazardous reactions**
Violent reactions possible with:
hydrogen peroxide
magnesium
- 10.4 Conditions to avoid**
No data available
- 10.5 Incompatible materials**
No data available
- 10.6 Hazardous decomposition products formed under fire conditions.**
In the event of fire: see section 5

SECTION 11: Toxicological Information

- 11.1 Information on toxicological effects**
 - Acute toxicity
Based on available data, the classification criteria are not met.
 - Skin corrosion/irritation
Based on available data, the classification criteria are not met.

Serious eye damage/eye irritation

Based on available data, the classification criteria are not met.

Respiratory or skin sensitisation

Based on available data, the classification criteria are not met.

Germ cell mutagenicity

Based on available data, the classification criteria are not met.

Reproductive toxicity

Based on available data, the classification criteria are not met.

Specific target organ toxicity - single exposure inhalation

May cause respiratory irritation.

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

SECTION 12: Ecological information

12.1 Toxicity

Very toxic to aquatic life with long lasting effects.

ECHA database for zinc oxide [CAS: 1314-13-2]:

Toxicity to fish:

LC₅₀ (Oncorhynchus mykiss (rainbow trout)): 0.169 mg Zn/l (at neutral/high pH and low hardness)

LC₅₀ (Pimephales promelas (fathead minnow)): 0.780 mg Zn/l (at low pH and high hardness) and 0.330 mg Zn/L (at neutral/high pH, high hardness)

12.2 Persistence and degradability

The methods for determining the biological degradability are not applicable to inorganic substances.

12.3 Bioaccumulative potential

No data available

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Endocrine disrupting properties

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

12.7 Other adverse effects

No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself. Notice Directive on waste 2008/98/EC.

SECTION 14: Transport information

14.1 UN number

ADR/RID: 3077 IMDG: 3077 IATA: 3077

14.2 UN proper shipping name

ADR/RID: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
(Zinc oxide)

IMDG: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
(Zinc oxide)

IATA: Environmentally hazardous substance, solid, n.o.s. (Zinc oxide)

14.3 Transport hazard class(es)

ADR/RID: 9 IMDG: 9 IATA: 9

14.4 Packaging group

ADR/RID: III IMDG: III IATA: III

14.5 Environmental hazards

ADR/RID: yes IMDG Marine pollutant: yes IATA: yes

14.6 Special precautions for user

Tunnel restriction code : (-)

Further information

EHS-Mark required (ADR 2.2.9.1.10, IMDG code 2.10.3) for single packagings and combination packagings containing inner packagings with Dangerous Goods > 5L for liquids or > 5kg for solids. Packages smaller than or equal to 5 kg / L , not dangerous goods of Class 9

SECTION 15: Regulatory information

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

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

National legislation

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.
ENVIRONMENTAL HAZARDS

Other regulations

Take note of Dir 94/22/EC on the protection of young people at work.

15.2 Chemical safety assessment

For this product a chemical safety assessment was not carried out.

SECTION 16: Other information

Full text of H-Statements referred to under sections 2 and 3.

H400 Very toxic to aquatic life.

H410 Very toxic to aquatic life with long lasting effects.

Full text of other abbreviations

ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; DIN - Standard of the German Institute for Standardisation; IATA - International Air Transport Association; IMDG - International Maritime Dangerous Goods; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); n.o.s. - Not Otherwise Specified; PBT - Persistent, Bioaccumulative and Toxic substance; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SDS - Safety Data Sheet; UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

Further information

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