Preparing for the New Era of Laboratories

# MATERIAL SAFETY DATA SHEET (MSDS)

According to regulation (EU) no.1907/2006

## ZINC OXIDE 99% AR

PRODUCT CODE : O-5232

CAS No : 1314-13-2

FORMULA : ZnO

UN No : 3077

website : www.labotiq.net

# MATERIAL SAFETY DATA SHEET (SDS/MSDS)
# ZINC OXIDE 99% AR

MSDS Number : 0421 | Date : June 19, 2025 | Version : 1.0

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

**1.1 Product Name** : **ZINC OXIDE 99% AR**
**Synonyms** : -
**CAS No.** : 1314-13-2
**HS Code** : 2817 0010
**Chemical Formula** : ZnO
**Molecular Weight** : 81.39 g/mol
**Product Code** : O-5232
**Brand** : Labotiq
**1.2 Manufacturer** : Labotiq
**Address** : Jl.Terapi Raya AD2-Bumi Menteng Asri Bogor, Jawa Barat Indonesia – 16111
**Website** : www.labotiq.net
**Email** : labotiq.id@gmail.com
**For information** : Phone : (+62-251) 839110, 8311662, Fax : (+62-251) 83135710
**Emergency number** : +6281316894650
**1.3 Application** : Laboratory chemicals, Manufacture of substances

## SECTION 2: Hazards identification

**2.1 Classification of the substance or mixture**
**Classification according to Regulation (EC) No 1272/2008**

| | |
|---|---|
| Short-term (acute) aquatic hazard, (Category 1) | H400: Very toxic to aquatic life. |
| Long-term (chronic) aquatic hazard, (Category 1) | H410: Very toxic to aquatic life with long lasting effects. |

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

**2.2 Label elements**

Labelling according Regulation (EC) No 1272/2008

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. |

**Reduced labelling (≤125 ml)**
**Hazard pictograms**

| | |
|---|---|
| Signal word | Warning |
| Hazard statements | none |
| Precautionary statements | none |

### 2.3 Other hazards

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.

Ecological information:
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.

Toxicological information:
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.

## SECTION 3: Composition/information on ingredients

### 3.1 Substances

| | |
|---|---|
| Synonyms | : Zinc Oxide 99 % |
| Formula | : ZnO |
| Molecular weight | : 81.39 g/mol |
| CAS-No. | : 1314-13-2 |

### 3.2 Mixture

**Hazardous ingredients according to Regulation (EC) No 1272/2008**

| Component | Classification | Concentration |
|---|---|---|
| Zinc oxide<br>CAS-No. 1314-13-2<br>EC-No. 215-222-5<br>Index-No. 030-013-00-7 | Aquatic Acute 1; Aquatic Chronic 1; H400, H410 M-Factor - Aquatic Acute: 1 M-Factor - Aquatic Chronic: 1 | <=100 % |

## 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**

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**

**Storage conditions**

Tightly closed. Dry.

**Storage class**
Storage class (TRGS 510): 11: Combustible Solids

**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**
**8.2 Exposure control**

**Appropriat engineering controls**
Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

**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 EU Directive 89/686/EEC and the standard EN 374 derived from it.

**Full contact**
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740, Size M)

**Splash contact**
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740, Size M)

**Body Protection**
Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

**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

The entrepeneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

**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

| | |
|---|---|
| Appearance | Form: powder<br>Colour: white |
| Odour | odorless |
| Odour Threshold | No data available |
| pH | 6,72 |
| Melting point | Melting point/freezing point: > 1.000 °C at ca.1.013,25 hPa – Regulation (EC) No. 440/2008, Annex, A.1 |
| Freezing point | No data available |
| Boiling point | No data available |
| Flash point | Not applicable |
| Auto-ignition temperature | No data available |
| Decomposition temperature | No data available |
| Flammability (solid, gas) | No data available |
| Vapour pressure | No data available |
| Relative vapour density at 20 °C | No data available |
| Relative density | 5,68 at 22 °C - Regulation (EC) No. 440/2008, Annex, A.3 |
| Density | 5,68 g/cm3 at 22 °C |
| Solubility | Water: Infinitely soluble |
| Water solubility | 0,0029 g/l at 20 °C - OECD Test Guideline 105- slightly soluble |
| Viscosity, kinematic | No data available |
| Viscosity, dynamic | No data available |
| Explosive properties | No data available |
| Oxidising properties | No data available |
| Explosive limits | No data available |

### 9.2. Other information
No additional information available

## SECTION 10: Stability and reactivity

### 10.1 Reactivity
No data available

### 10.2 Chemical stability
The product is chemically stable under standard ambient conditions (room temperature) .

### 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**
in the event of fire: See section 5.

## SECTION 11: Toxicological information

**11.1 Information on toxicological effects**

**Acute toxicity**
LD50 Oral - Rat - male and female - > 2.000 mg/kg (OECD Test Guideline 423)
LC50 Inhalation - Rat - male and female - 4 h - > 1,79 mg/l - dust/mist (US-EPA)
LD50 Dermal - Rat - male and female - > 2.000 mg/kg (OECD Test Guideline 402)

**Skin corrosion/irritation**
Skin - reconstructed human epidermis (RhE)
Result: No skin irritation - 1 h (OECD Test Guideline 431)

**Serious eye damage/eye irritation**
Eyes - Bovine cornea
Result: No eye irritation - 4 h (OECD Test Guideline 437)

**Respiratory or skin sensitisation**
Maximization Test - Guinea pig
Result: negative (OECD Test Guideline 406)

**Germ cell mutagenicity**
Test Type: Ames test
Test system: Escherichia coli/Salmonella typhimurium
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471 Result: negative
Test Type: In vitro mammalian cell gene mutation test
Test system: mouse lymphoma cells
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 476
Result: Positive results were obtained in some in vitro tests.
Test Type: Chromosome aberration test in vitro
Test system: Chinese hamster lung cells
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 473
Result: negative
Test Type: Chromosome aberration test in vitro
Test system: Human lymphocytes
Metabolic activation: without metabolic activation
Result: positive
Remarks: (ECHA)
Test Type: Micronucleus test
Test system: Human epithelioid cells
Metabolic activation: without metabolic activation
Method: OECD Test Guideline 487
Result: negative
Test Type: In vivo micronucleus test
Species: Mouse
Cell type: Red blood cells (erythrocytes)

Application Route: Intraperitoneal
Method: OECD Test Guideline 474
Result: negative

**Carcinogenicity**
No data available

**Reproductive toxicity**
No data available

**Specific target organ toxicity - single exposure**
No data available

**Specific target organ toxicity - repeated exposure**
No data available

**Aspiration hazard**
No data available

**Additional Information**
Endocrine disrupting properties
Product:
Assessment :
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.

Repeated dose toxicity - Rat - male and female - Oral - 13 Weeks - NOAEL (No observed adverse effect level) - 31,52 mg/kg Remarks: (in analogy to similar products)

Repeated dose toxicity - Rat - male - Inhalation - 3 Months Repeated dose toxicity - Rat - male and female - Dermal - 28 d - LOAEL (Lowest observed adverse effect level) - 75 mg/kg

RTECS: ZH4810000 Zinc oxide dust or fume can irritate the respiratory tract. Prolonged skin contact can produce a severe dermatitis called oxide pox. Exposure to high levels of dust or fume can cause metallic taste, marked thirst, coughing, fatigue, weakness, muscular pain, and nausea followed by fever and chills. Severe overexposure may result in bronchitis or pneumonia with a bluish tint to the skin., prolonged or repeated exposure can cause:, Reversible liver enzyme abnormalities., Diarrhea To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

The following applies to zinc compounds in general: only slightly absorbable via the gastrointestinal tract. Adstringent effect on mucous membranes. Metal-fume fever after inhalation of large quantities. Handle in accordance with good industrial hygiene and safety practice.

## SECTION 12: Ecological information

### 12.1 Toxicity

Toxicity to fish
semi-static test LC50 - Danio rerio (zebra fish) - 2,525 mg/l - 96 h
Remarks: (ECHA)

Toxicity to daphnia and other aquatic invertebrates

static test EC50 - Daphnia magna (Water flea) - 1 mg/l - 48 h (OECD Test Guideline 202)

Toxicity to algae
static test NOEC - Pseudokirchneriella subcapitata (microalgae) - 0,024 mg/l - 72 h
(OECD Test Guideline 201)

Toxicity to bacteria
static test EC50 - activated sludge - > 1.000 mg/l - 3 h (OECD Test Guideline 209)

Toxicity to fish (Chronic toxicity)
flow-through test NOEC - Oncorhynchus mykiss (rainbow trout) - 0,2 mg/l - 30 d
(OECD Test Guideline 215)
Remarks: (in analogy to similar products)

The value is given in analogy to the following substances: zinc chloride

Toxicity to daphnia and other aquatic invertebrates
(Chronic toxicity) semi-static test EC50 - Daphnia magna (Water flea) - 0,08 mg/l - 21 d
(OECD Test Guideline 211)

**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 Other adverse effects**
Endocrine disrupting properties
Product:
Assessment : 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.

## SECTION 13: Disposal considerations

**13.1 Waste treatment methods**
**Product**
Burn in a chemical incinerator equipped with an afterburner and scrubber b highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company.

**Contaminated packaging**
Dispose of as unused product.

## 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**

**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.
E1 ENVIRONMENTAL HAZARDS
E1 ENVIRONMENTAL HAZARDS

Other regulations
Take note of Dir 94/33/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.

**National Fire Protection Association (U.S.A.):**

Health: 1
Flammability: 0
Reactivity: 0

***Further information***

*The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Labotiq shall not be held liable for any damage resulting from handling or from contact with the above product.*

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