

Revision: 14.11.2024

**Zinc oxide a.r.**

Product code: AC14.01046

Page 1 of 12

**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1. Product identifier**

Zinc oxide a.r.

REACH Registration Number: 01-2119463881-32-XXXX  
CAS No: 1314-13-2  
Index No: 030-013-00-7  
EC No: 215-222-5

**1.2. Relevant identified uses of the substance or mixture and uses advised against****Use of the substance/mixture**

Reagents and laboratory chemicals  
Only for laboratory and analysis purposes.

**Uses advised against**

Do not use for private purposes (household).

**1.3. Details of the supplier of the safety data sheet****Details of the supplier of the safety data sheet**

Company name: AnalytiChem Services, Unipessoal, Lda  
Street: Rua de Júlio Dinis 676 7º  
Place: N-4050-320 Porto  
Telephone: +351 226002917  
E-mail: info@analyticchem.com  
Contact person: SDS service department  
E-mail: SDS@analyticchem.com  
Internet: www.analyticchem.com  
Responsible Department: SDS service department

**Supplier or manufacturer details**

Company name: AnalytiChem Belgium NV  
Street: Industriezone "De Arend" 2  
Place: B-8210 Zedelgem  
Telephone: +32 50 28 83 20  
E-mail: info.be@analyticchem.com  
Contact person: SDS service department  
E-mail: SDS@analyticchem.com  
Responsible Department: AnalytiChem  
EU-Belgium: AnalytiChem Belgium, Industriezone "De Arend" 2, 8210 Zedelgem, Belgium, +32 50 28 83 20  
EU-Germany: AnalytiChem Germany, Stempelstrasse 6, 47167 Duisburg, Germany, +49 203 51 94 – 200  
EU-Netherlands: AnalytiChem Netherlands, Communicatieweg 7, 3641 SG Mijdrecht, The Netherlands, +31 297 286848  
UK: AnalytiChem UK, Unit 7 Launton Business Center, Murdock Road, Bicester, OX26 4XB, England, +44 1869 355 500  
USA: AnalytiChem USA, 227 China Road, Winslow, Maine, 04901, United States, +1 800-244-8378  
Canada: AnalytiChem Canada, 21800 Clark Graham Avenue, Baie d'Urfe, H9X 4B6, Canada, +1 514-457-0701  
Australia: ORE Research & Exploration Pty Ltd, 37A Hosie Street, Bayswater North, 3153, Australia, +61 3 9729 0333

**1.4. Emergency telephone number:**

+44 20 3807 3798 (CHEMTREC)

Revision: 14.11.2024

**Zinc oxide a.r.**

Product code: AC14.01046

Page 2 of 12

**Further Information**

No data available

**SECTION 2: Hazards identification****2.1. Classification of the substance or mixture****Regulation (EC) No 1272/2008**

Aquatic Acute 1; H400

Aquatic Chronic 1; H410

Full text of hazard statements: see SECTION 16.

**2.2. Label elements****Regulation (EC) No 1272/2008**

Signal word: Warning

Pictograms:

**Hazard statements**

H410 Very toxic to aquatic life with long lasting effects.

**Precautionary statements**

P273 Avoid release to the environment.

P391 Collect spillage.

**2.3. Other hazards**

No data available

**SECTION 3: Composition/information on ingredients****3.1. Substances**

Sum formula: ZnO

Molecular weight: 81,37 g/mol

**Relevant ingredients**

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
Classification (Regulation (EC) No 1272/2008)				
1314-13-2	zinc oxide			100 %
	215-222-5	030-013-00-7	01-2119463881-32-XXXX	
	Aquatic Acute 1, Aquatic Chronic 1; H400 H410			

Full text of H and EUH statements: see section 16.

**Specific Conc. Limits, M-factors and ATE**

CAS No	EC No	Chemical name	Quantity
Specific Conc. Limits, M-factors and ATE			
1314-13-2	215-222-5	zinc oxide	100 %
	dermal: LD50 = > 2000 mg/kg; oral: LD50 = > 5000 mg/kg		

**Further Information**

This product does not contain substances of very high concern according to Regulation (EC) No 1907/2006 (REACH), Article 57 above the respective regulatory concentration limit of = 0.1 % (w/w).

Revision: 14.11.2024

**Zinc oxide a.r.**

Product code: AC14.01046

Page 3 of 12

**SECTION 4: First aid measures****4.1. Description of first aid measures****General information**

No data available

**After inhalation**

Provide fresh air.

**After contact with skin**

Wash immediately with: Water

Take off immediately all contaminated clothing and wash it before reuse.

**After contact with eyes**

Rinse immediately carefully and thoroughly with eye-bath or water.

Remove contact lenses, if present and easy to do. Continue rinsing.

**After ingestion**

Rinse mouth immediately and drink plenty of water.

Call a physician immediately.

**4.2. Most important symptoms and effects, both acute and delayed**

Irritant

Fever

**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**

Co-ordinate fire-fighting measures to the fire surroundings.

**Unsuitable extinguishing media**

no restriction

**5.2. Special hazards arising from the substance or mixture**

Non-combustible solids

Hazardous combustion products

In case of fire may be liberated:

Metal oxide smoke, toxic

**5.3. Advice for firefighters**

Wear a self-contained breathing apparatus and chemical protective clothing.

Avoid contact with skin, eyes and clothes.

**Additional information**

Suppress gases/vapours/mists with water spray jet.

Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

**SECTION 6: Accidental release measures****6.1. Personal precautions, protective equipment and emergency procedures****For non-emergency personnel**

Provide adequate ventilation.

Use personal protection equipment.

Avoid contact with skin, eyes and clothes.

Remove persons to safety.

Emergency procedures

**Zinc oxide a.r.**

Revision: 14.11.2024

Product code: AC14.01046

Page 4 of 12

Consult an expert

Do not breathe dust/fume/gas/mist/vapours/spray.

**For emergency responders**

Precautionary statements For emergency responders : Personal protection equipment: see section 8

**6.2. Environmental precautions**

Do not allow to enter into surface water or drains.

**6.3. Methods and material for containment and cleaning up****For containment**

Cover drains.

Prevent spread over a wide area (e.g. by containment or oil barriers).

Collect in closed and suitable containers for disposal.

Take up carefully when dry. Take up dust-free and set down dust-free.

**For cleaning up**

Clean contaminated articles and floor according to the environmental legislation.

**Other information**

Provide adequate ventilation.

Do not breathe dust/fume/gas/mist/vapours/spray.

Wear breathing apparatus if exposed to vapours/dusts/aerosols.

**6.4. Reference to other sections**

Safe handling: see section 7

Personal protection equipment: see section 8

Disposal: see section 13

**SECTION 7: Handling and storage****7.1. Precautions for safe handling****Advice on safe handling**

Avoid dust formation.

Do not breathe dust.

Read label before use.

**Advice on protection against fire and explosion**

No special fire protection measures are necessary.

**Advice on general occupational hygiene**

Remove contaminated, saturated clothing immediately. Draw up and observe skin protection programme. Wash hands and face before breaks and after work and take a shower if necessary. When using do not eat or drink.

**Further information on handling**

Draw up and observe skin protection programme.

Wash hands and face before breaks and after work and take a shower if necessary.

Take off immediately all contaminated clothing and wash it before reuse.

**7.2. Conditions for safe storage, including any incompatibilities****Requirements for storage rooms and vessels**

Store in a dry place.

**Hints on joint storage**

Take national regulations into account.

**Further information on storage conditions**

Keep container tightly closed.

storage temperature +5°C - +30 °C

**7.3. Specific end use(s)**

Laboratory chemicals

Revision: 14.11.2024

Zinc oxide a.r.

Product code: AC14.01046

Page 5 of 12

**SECTION 8: Exposure controls/personal protection****8.1. Control parameters****DNEL/DMEL values**

CAS No	Substance			
DNEL type		Exposure route	Effect	Value
1314-13-2	zinc oxide			
Worker DNEL, long-term		inhalation	systemic	5 mg/m <sup>3</sup>
Worker DNEL, long-term		inhalation	local	0,5 mg/m <sup>3</sup>
Worker DNEL, long-term		dermal	systemic	83 mg/kg bw/day
Consumer DNEL, long-term		inhalation	systemic	2,5 mg/m <sup>3</sup>
Consumer DNEL, long-term		dermal	systemic	83 mg/kg bw/day
Consumer DNEL, long-term		oral	systemic	0,83 mg/kg bw/day

**PNEC values**

CAS No	Substance		
Environmental compartment			Value
1314-13-2	zinc oxide		
Freshwater			0,0206 mg/l
Marine water			0,0061 mg/l
Freshwater sediment			117,8 mg/kg
Marine sediment			56,5 mg/kg
Micro-organisms in sewage treatment plants (STP)			0,1 mg/l
Soil			35,6 mg/kg

**8.2. Exposure controls****Appropriate engineering controls**

Technical measures and the application of suitable work processes have priority over personal protection equipment.

Provide adequate ventilation as well as local exhaustion at critical locations.

**Individual protection measures, such as personal protective equipment****Eye/face protection**

Suitable eye protection: goggles.

**Hand protection**

When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits. The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

Suitable examples are gloves of KCL GmbH, D-36124 Eichenzell, e-mail: vertrieb@kcl.de with the following specification (test according to EN 374):

By long-term hand contact:

Trade name/designation: KCL 741 Dermatril® L

Recommended material: NBR (Nitrile rubber) 0,11 mm

**Zinc oxide a.r.**

Revision: 14.11.2024

Product code: AC14.01046

Page 6 of 12

Wearing time with permanent contact: &gt; 480 min

By short-term hand contact:

Trade name/designation: KCL 741 Dermatril® L

Recommended material: NBR (Nitrile rubber) 0,11 mm

Wearing time with occasional contact (splashes): &gt; 480 min

The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types. This recommendation applies only to the product stated in the safety data sheet supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

**Skin protection**

Wear suitable protective clothing.

The choice of body protection depends on the concentration and quantity of hazardous substances. The chemical resistance of protective agents must be clarified with their suppliers.

**Respiratory protection**

Respiratory protection necessary at: dust formation

Filtering device with filter or ventilator filtering device of type: P2

The entrepreneur 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.

**Environmental exposure controls**

Do not allow to enter into surface water or drains.

**SECTION 9: Physical and chemical properties****9.1. Information on basic physical and chemical properties**

Physical state:	solid
Colour:	white
Odour:	odourless
Odour threshold:	not determined
Melting point/freezing point:	1975 °C
Boiling point or initial boiling point and boiling range:	not determined
Flammability:	not determined
Lower explosion limits:	not applicable
Upper explosion limits:	not applicable
Flash point:	not applicable
Auto-ignition temperature:	not determined
Decomposition temperature:	not determined
pH-Value (at 20 °C):	~7 (50 g/l)
Viscosity / kinematic:	not determined
Water solubility: (at 29 °C)	0,0016 g/l
Solubility in other solvents	not determined
Dissolution rate:	not determined
Partition coefficient n-octanol/water:	No data available
Dispersion stability:	not determined
Vapour pressure:	No data available
Vapour pressure:	not determined

Revision: 14.11.2024

**Zinc oxide a.r.**

Product code: AC14.01046

Page 7 of 12

Density:	5,68 g/cm <sup>3</sup>
Relative density:	not determined
Bulk density:	200-700 kg/m <sup>3</sup>
Relative vapour density:	not determined
Particle characteristics:	not determined

**9.2. Other information****Information with regard to physical hazard classes**

Explosive properties	No data available
Sustained combustibility:	No data available
Self-ignition temperature	
Solid:	not determined
Gas:	not applicable

**Other safety characteristics**

Evaporation rate:	not determined
Solvent separation test:	not determined
Solvent content:	not determined
Solid content:	100%
Sublimation point:	not determined
Softening point:	not determined
Pour point:	not determined
not determined:	
Viscosity / dynamic:	not determined
Flow time:	not determined

**Further Information**

not determined

**SECTION 10: Stability and reactivity****10.1. Reactivity**

No data available

**10.2. Chemical stability**

The product is stable under storage at normal ambient temperatures.

**10.3. Possibility of hazardous reactions**

Violent reaction 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 case of fire may be liberated:  
SECTION 5: Firefighting measures

**Further information**

No data available

Revision: 14.11.2024

**Zinc oxide a.r.**

Product code: AC14.01046

Page 8 of 12

**SECTION 11: Toxicological information****11.1. Information on hazard classes****Toxicokinetics, metabolism and distribution**

No data available

**Acute toxicity**

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

CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
1314-13-2	zinc oxide				
	oral	LD50 mg/kg	> 5000 Rat	Publication (1977)	OECD Guideline 401
	dermal	LD50 mg/kg	> 2000 Rat	Study report (2010)	OECD Guideline 402

**Irritation and corrosivity**

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.  
slightly irritant but not relevant for classification.**Sensitising effects**

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

**Carcinogenic/mutagenic/toxic effects for reproduction**

Germ cell mutagenicity: Based on available data, the classification criteria are not met.

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

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

**STOT-single exposure**

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

**STOT-repeated exposure**

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

**Aspiration hazard**

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

**Information on likely routes of exposure**

No data available

**Specific effects in experiment on an animal**

No data available

**Additional information on tests**

No data available

**Practical experience**

No data available

**11.2. Information on other hazards****Endocrine disrupting properties**

No data available

**Other information**

No data available

**Further information**

Irritant

Fever

**Zinc oxide a.r.**

Revision: 14.11.2024

Product code: AC14.01046

Page 9 of 12

**SECTION 12: Ecological information****12.1. Toxicity**

Very toxic to aquatic life.

Very toxic to aquatic life with long lasting effects.

CAS No	Chemical name	Aquatic toxicity	Dose	[h]   [d]	Species	Source	Method
1314-13-2	zinc oxide						
	Acute fish toxicity	LC50 0,315 mg/l	96 h		Thymallus arcticus	Ecotoxicology and environmental safety 2	other: American Society for testing matr
	Acute algae toxicity	ErC50 0,74 mg/l	96 h		Anabaena sp.	Environmental Toxicology 30:895-903 (201	Algae groups exposed to different condit
	Acute crustacea toxicity	EC50 1,22 mg/l	48 h		Daphnia magna	Publication (1995)	other: US EPA/600/4-85/013 : methods for
	Fish toxicity	NOEC 0,44 mg/l	72 d		Oncorhynchus mykiss	Trans. Am. Fish. Soc. 111, 70-77 (1982)	lab -designed dose response test with sm
	Algae toxicity	NOEC 1,071 mg/l	16 d		Macrocystis pyrifera	Mar Environ Res 26(2):113-134 (1988)	16-d and 2-d toxicity test to early life
	Crustacea toxicity	NOEC 0,031 mg/l	50 d		Daphnia magna	Aquatic Toxicology 12,273-290 (1988)	chronic tests were performed for an exte
	Acute bacteria toxicity	EC50 5,2 mg/l ( )	3 h		activated sludge of a predominantly domestic sewag	Water research volume 17, nr10, 1363-136	OECD Guideline 209

**12.2. Persistence and degradability**

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

**12.3. Bioaccumulative potential****BCF**

CAS No	Chemical name	BCF	Species	Source
1314-13-2	zinc oxide	0,002	Danio rerio	Ware Reasearch 1:99-

**12.4. Mobility in soil**

No data available

**12.5. Results of PBT and vPvB assessment**

This substance does not meet the PBT/vPvB criteria of UK REACH.

**12.6. Endocrine disrupting properties**

This substance does not have endocrine disrupting properties with respect to non-target organisms.

**12.7. Other adverse effects**

Discharge into the environment must be avoided.

**Further information**

Do not allow to enter into surface water or drains.

**SECTION 13: Disposal considerations**

Revision: 14.11.2024

**Zinc oxide a.r.**

Product code: AC14.01046

Page 10 of 12

**13.1. Waste treatment methods****Disposal recommendations**

Waste disposal according to directive 2008/98/EC, covering waste and dangerous waste.

Do not mix with other wastes.

Send to a physico-chemical treatment facility under observation of official regulations. Do not empty into drains.

**Contaminated packaging**

Handle contaminated packages in the same way as the substance itself.

The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

**SECTION 14: Transport information****Land transport (ADR/RID)****14.1. UN number or ID number:** UN 3077**14.2. UN proper shipping name:** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (zinc oxide)**14.3. Transport hazard class(es):** 9**14.4. Packing group:** III

Hazard label: 9

Classification code: M7

Special Provisions: 274 335 375 601

Limited quantity: 5 kg

Excepted quantity: E1

Transport category: 3

Hazard No: 90

Tunnel restriction code: -

**Inland waterways transport (ADN)****14.1. UN number or ID number:** UN 3077**14.2. UN proper shipping name:** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (zinc oxide)**14.3. Transport hazard class(es):** 9**14.4. Packing group:** III

Hazard label: 9

Classification code: M7

Special Provisions: 274 335 375 601

Limited quantity: 5 kg

Excepted quantity: E1

**Marine transport (IMDG)****14.1. UN number or ID number:** UN 3077**14.2. UN proper shipping name:** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (zinc oxide)**14.3. Transport hazard class(es):** 9**14.4. Packing group:** III

Hazard label: 9

Special Provisions: 274, 335, 966, 967, 969

Limited quantity: 5 kg

Excepted quantity: E1

EmS: F-A, S-F

**Air transport (ICAO-TI/IATA-DGR)****14.1. UN number or ID number:** UN 3077

Revision: 14.11.2024

**Zinc oxide a.r.**

Product code: AC14.01046

Page 11 of 12

<b><u>14.2. UN proper shipping name:</u></b>	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (zinc oxide)
<b><u>14.3. Transport hazard class(es):</u></b>	9
<b><u>14.4. Packing group:</u></b>	III
Hazard label:	9
Special Provisions:	A97 A158 A179 A197
Limited quantity Passenger:	30 kg G
Passenger LQ:	Y956
Excepted quantity:	E1
IATA-packing instructions - Passenger:	956
IATA-max. quantity - Passenger:	400 kg
IATA-packing instructions - Cargo:	956
IATA-max. quantity - Cargo:	400 kg

**14.5. Environmental hazards**

ENVIRONMENTALLY HAZARDOUS:	Yes
Danger releasing substance:	zinc oxide

**14.7. Maritime transport in bulk according to IMO instruments**

not applicable

**SECTION 15: Regulatory information****15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****EU regulatory information**

Information according to Directive 2012/18/EU (SEVESO III):	E1 Hazardous to the Aquatic Environment
-------------------------------------------------------------	-----------------------------------------

**National regulatory information**

Employment restrictions:	Observe restrictions to employment for juveniles according to the 'juvenile work protection guideline' (94/33/EC).
Water hazard class (D):	2 - obviously hazardous to water

**SECTION 16: Other information****Changes**

This data sheet contains changes from the previous version in section(s): 9,11,12.

**Abbreviations and acronyms**

Aquatic Acute 1: Hazardous to the aquatic environment, hazard category: Acute 1  
Aquatic Chronic 1: Hazardous to the aquatic environment, long-term hazard category: Chronic 1  
ADR: Accord européen sur le transport des marchandises dangereuses par Route  
(European Agreement concerning the International Carriage of Dangerous Goods by Road )  
IMDG: International Maritime Code for Dangerous Goods  
IATA: International Air Transport Association  
GHS: Globally Harmonized System of Classification and Labelling of Chemicals  
EINECS: European Inventory of Existing Commercial Chemical Substances  
ELINCS: European List of Notified Chemical Substances  
CAS: Chemical Abstracts Service  
LC50: Lethal concentration, 50%  
LD50: Lethal dose, 50%

**Relevant H and EUH statements (number and full text)**

H400 Very toxic to aquatic life.  
H410 Very toxic to aquatic life with long lasting effects.

**Zinc oxide a.r.**

Revision: 14.11.2024

Product code: AC14.01046

Page 12 of 12

**Further Information**

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.

The information is based on the present level of our knowledge. It does not, however, give assurance of product properties and establishes no contract legal rights.

The receiver of our product is singularly responsible for adhering to existing laws and regulations.

Provide appropriate information, instructions and training to users