

Material safety data sheet SDS

According to EU Regulation EC No. 453/2010 in the current version

ZINC OXIDE

1. Identification of the substance/mixture and company

Product name: Zinc oxide
INCI: Zinc oxide
Uses: Raw material for cosmetics
Supplier company identification: Elemental SRL, Piața Cazărmii no.15, 410188-Oradea, jud.Bihor, Romania
Tel/Fax: +40259-436.755, www.ellemental.com
Emergency: RO: număr național pentru cazuri de urgență: 021 3183606 Institutul de Sănătate Publică București.
International emergency number: +49 180 2273-112

2. Hazards Identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Aquatic Acute 1 H400

Aquatic Chronic 1 H410

Full text of H-phrases: see section 16

Classification according to Directive 67/548/EEC or 1999/45/EC

N; R50/53

Full text of R-phrases: see section 16

Adverse physicochemical, human health and environmental effects

No additional information available

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP): GHS09

Signal word (CLP): Warning



Hazard statements (CLP): H410 - Very toxic to aquatic life with long lasting effects

Precautionary statements (CLP): P273 - Avoid release to the environment P391 - Collect spillage P501 - Dispose of contents/container to ...

2.3. Other hazards

This substance/mixture does not meet the PBT criteria of REACH, annex XIII.

This substance/mixture does not meet the vPvB criteria of REACH, annex XIII

3. Declaration of ingredients

3.1 Substances

Zinc oxide

(CAS No.) 1314-13-2 (EC no) 215-222-5 (EC index no) 030-013-00-7 (REACH-no) 01-2119463881-32-0043

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Aquatic Acute 1, H400 Aquatic Chronic 1, H410

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3.2 Mixtures

Not applicable

Full text of R-, H- and EUH-phrases: see section 16

4. First aid measures

4.1. Description of first aid measures

First-aid measures general:

Remove person to uncontaminated area. Avoid all unnecessary exposure.

First-aid measures after inhalation:

Assure fresh air breathing. Call a POISON CENTER/doctor/physician if you feel unwell.

First-aid measures after skin contact:

Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse.

First-aid measures after eye contact:

Rinse immediately with plenty of water. Remove contact lenses, if present and easy to do. Continue rinsing.

First-aid measures after ingestion:

Rinse mouth. Drink plenty of water. Call a POISON CENTER/doctor/physician if you feel unwell.

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

Symptoms/injuries:

Under normal conditions of use, no adverse effects to health have been observed.

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

5. Fire fighting measures

5.1. Extinguishing media

Suitable extinguishing media:

Not combustible. Use extinguishing media appropriate for surrounding fire. Do not contaminate ground and surface water.

Unsuitable extinguishing media:

Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

Reactivity:

No dangerous reactions known.

5.3. Advice for firefighters

Firefighting instructions:

Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Avoid (reject) fire-fighting water to enter environment.

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Protection during firefighting:

Do not enter fire area without proper protective equipment, including respiratory protection. Use a self-contained breathing apparatus and also a protective suit.

Other information:

No hazardous decomposition products known.

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Protective equipment:

Wear suitable protective clothing and eye or face protection. Minimize generation of dust. Wear suitable respiratory equipment.

Emergency procedures:

Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment:

Equip cleanup crew with proper protection.

Emergency procedures:

Ventilate area.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters. Avoid release to the environment. Prevent soil and water pollution.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up:

Take up mechanically (sweeping, shovelling) and collect in suitable container for disposal. Sweep spilled substance into containers; if appropriate, moisten first to prevent dusting. Keep in suitable, closed containers for disposal.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection

7. Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed:

Does not present any particular risk, provided it is handled in accordance with good occupational hygiene and safety practice and that precautions are taken to avoid the inhalation of dust.

Precautions for safe handling:

Avoid all unnecessary exposure. Wear suitable protective clothing, gloves and eye or face protection. Wear suitable respiratory equipment. Minimize generation of dust.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures:

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Refer to all applicable national, international and local regulations or provisions.

Storage conditions:

Store tightly closed in a dry and cool place. Keep in a cool place away from reducing agents/(strong) acids/(strong) bases.

Incompatible products:

Strong bases. strong acids.

Packaging materials:

Keep only in the original container.

7.3. Specific end use(s)

No additional information available

8. Exposure controls / personal protection

8.1 Control parameters

Germany TRGS 900 Occupational exposure limit value (mg/m³) 6 mg/m³ dust 5 mg/m³ fume

Germany Remark (TRGS 900) DFG (1997)

Zinc oxide (1314-13-2)

DNEL/DMEL (Workers)

Acute - systemic effects, inhalation

5 mg/m³

DNEL/DMEL (General population)

Acute - systemic effects, dermal

83 mg/kg bodyweight, 5000 mg Zn/day

Acute - systemic effects, inhalation

2.5 mg/m³

Acute - systemic effects, oral

0.83 mg/kg bodyweight, 50 mg Zn/day

PNEC (Water)

PNEC aqua (freshwater)

0.0206 mg/l

PNEC aqua (marine water)

0.0061 mg/l

PNEC (Sediment)

PNEC sediment (freshwater)

117.8 mg/kg dwt

PNEC sediment (marine water)

56.5 mg/kg dwt

PNEC (Soil)

PNEC soil

35.6 mg/kg dwt

PNEC (STP)

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PNEC sewage treatment plant
0.052 mg/l

8.2 Exposure controls

Appropriate engineering controls:

Provide adequate general and local exhaust ventilation. Ensure exposure is below occupational exposure limits (where available).

Personal protective equipment:

Avoid all unnecessary exposure.

Hand protection:

Wear protective gloves.

Eye protection:

Chemical goggles or safety glasses.

Respiratory protection:

Wear appropriate mask. In case of insufficient ventilation, wear suitable respiratory equipment.

Environmental exposure controls:

Avoid release to the environment.

Other information:

Do not eat, drink or smoke during use

9. Physical and chemical properties

Physical state: Solid

Molecular mass: 81.38 g/mol

Colour: white to slightly yellow. (brown F80/F72).

Odour: odourless.

Odour threshold: No data available

pH: 7 - 8 ISO 787/9

Relative evaporation rate (butylacetate=1): No data available

Melting point: 1970 - 1975 °C

Freezing point: No data available

Boiling point: Not applicable

Flash point: Not applicable

Self ignition temperature: Not applicable

Decomposition temperature: No data available

Flammability (solid, gas): Non flammable.

Vapour pressure: No data available

Relative vapour density at 20 °C: No data available

Relative density: No data available

Density: 300 - 2000 kg/m³ DIN 53 466

Solubility: Water: < 2 mg/l LISEC BO 016 1997

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Organic solvent: Negligible.
Log Pow: Not applicable
Log Kow: No data available
Viscosity, kinematic: No data available
Viscosity, dynamic: No data available
Explosive properties: Not applicable. VDI 2263
Oxidising properties: Not applicable.
Explosive limits: No data available
9.2. Other information
Sublimation point: 1800 °C Approximately

10. Stability and reactivity

10.1. Reactivity
No dangerous reactions known.
10.2. Chemical stability
Stable under normal conditions.
10.3. Possibility of hazardous reactions
Not established.
10.4. Conditions to avoid
Direct sunlight. Extremely high or low temperatures.
10.5. Incompatible materials
strong acids. Strong bases. Hydrogen peroxide. Magnesium.
10.6. Hazardous decomposition products
No hazardous decomposition products known.

11. Toxicological information

Acute toxicity: Not classified
Zinc oxide (1314-13-2) LD50 oral rat > 5000 mg/kg Löser (1977) LC50 inhalation rat (mg/l) > 5.7 mg/l 4 h; Klimisch and Freiberg (1982)
Skin corrosion/irritation: Not expected to be an irritant (Löser 1977; Lansdown 1991)
pH: 7 - 8 ISO 787/9
Serious eye damage/irritation: Not expected to be an irritant (Van Huygevoort 1999e; Thijssen 1978; Löser 1977)
pH: 7 - 8 ISO 787/9
Respiratory or skin sensitisation: Did not cause sensitisation (Van Huygevoort 1999 g, h)
Germ cell mutagenicity: This substance does not meet the criteria for classification as CMR category 1A or 1B according to CLP.
Based on available data, the classification criteria are not met
Carcinogenicity: This substance does not meet the criteria for classification as CMR category 1A or 1B according to CLP.
Based on available data, the classification criteria are not met

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Reproductive toxicity: This substance does not meet the criteria for classification as CMR category 1A or 1B according to CLP.

Based on available data, the classification criteria are not met

Specific target organ toxicity (single exposure): Not classified

Based on available data, the classification criteria are not met

Specific target organ toxicity (repeated exposure): Not classified

Based on available data, the classification criteria are not met

Aspiration hazard: Not available

Based on available data, the classification criteria are not met

Potential Adverse human health effects and symptoms: Based on available data, the classification criteria are not met.

12. Ecological information

12.1. Toxicity

Ecology - water: Very toxic to aquatic life. Very toxic to aquatic life with long lasting effects.

Zinc oxide (1314-13-2)

EC50 Daphnia 1

0.413 mg/l pH < 7; Zn⁺⁺; 48 h Ceriodaphnia dubia (Hyne et al. 2005)

ErC50 (algae)

0.136 mg/l pH > 7 - 8.5; Zn⁺⁺; 72 h Selenastrum capricornutum (Van Ginneken 1994)

CE50 Daphnia

0.67 mg/l pH < 7; Zn (ZnO); 48 h Ceriodaphnia dubia (Hyne et al. 2005)

ErC50 (algae)

0.21 mg/l pH > 7 - 8.5; Zn (ZnO); 72 h Selenastrum capricornutum

12.2. Persistence and degradability

Zinc oxide (1314-13-2)

Persistence and degradability

Not required.

12.3. Bioaccumulative potential

Zinc oxide (1314-13-2)

Log Pow

Not applicable

Bioaccumulative potential

No bioaccumulation.

12.4. Mobility in soil

Zinc oxide (1314-13-2)

Ecology - soil

Soil – water: 158.5 L/kg.

12.5. Results of PBT and vPvB assessment

Zinc oxide (1314-13-2)

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This substance/mixture does not meet the vPvB criteria of REACH, annex XIII.

12.6. Other adverse effects

Other information: Avoid release to the environment.

13. Disposal considerations

13.1. Waste treatment methods

Regional legislation (waste): Dispose in a safe manner in accordance with local/national regulations.

Waste treatment methods: This material and its container must be disposed of as hazardous waste. This material and its container must be disposed of in a safe way.

Waste disposal recommendations: Empty the packaging completely prior to disposal.

Ecology - waste materials: Avoid release to the environment.

EURLW code: 06 03 16 - metallic oxides other than those mentioned in 06 03 15 Pure substances.

14. Transport information

In accordance with ADR / RID / ADNR / IMDG / ICAO / IATA

14.1. UN number

UN-No.: 3077

14.2. UN proper shipping name

Proper Shipping Name: Zinc oxide

Transport document description: UN 3077 Zinc oxide, 9, III, (E)

14.3. Transport hazard class(es)

Class (UN): 9

Hazard labels (UN): 9

14.4. Packing group

Packing group (UN): III

14.5. Environmental hazards

Dangerous for the environment

Marine pollutant: Other information:

No supplementary information available.

14.6. Special precautions for user

14.6.1. Overland transport

Hazard identification number (Kemler No.): 90

Classification code (UN): M7

Orange plates: Transport category (ADR)3

Tunnel restriction code: E

Limited quantities (ADR)5kg

Excepted quantities (ADR): E1

EAC code: 2Z

14.6.2. Transport by sea

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EmS-No. (1): F-A, S-F

14.6.3. Air transport

No additional information available

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

15. Regulatory information

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

15.1.1. EU-Regulations

No REACH Annex XVII restrictions

15.1.2. National regulations

UK See COMAH regulation ((See COMAH regulation (if more than 100t resp. 200 t on site, EC-Directive 96/82/EG).

Take note of directive 94/33/EC on the protection of young people at work. No additional national regulations for the United Kingdom are known to the supplier.

Germany

Wassergefährdungsklasse (WGK): 2 - wassergefährdend

Lagerklasse (LGK): LGK 13 - Nicht brennbare Feststoffe

StörfallV. Annex I: No. 9a

TA-Luft: 0.2 kg/h; 20 mg/m³

15.2. Chemical safety assessment

A chemical safety assessment has been carried out

16. Additional information

16.1 Abbreviations

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Test-ing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regula-tion (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergen-cy Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration as-sociated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good La-boratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships car-rying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - Interna-tional Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; INCI: International Nomenclature of Cosmetic Ingredients; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 -

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Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Cooperation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; PNEC: Predicted No Effect Concentration; 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; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of Very High Concern; STE: Short-term exposure; STEL: Short Term Exposure limit; STOT: Specific Target Organ Toxicity; TCSI - Taiwan Chemical Substance Inventory; TECL - Thailand Existing Chemicals Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

16.2 Full H sentences text in point 3 :

Full text of R-, H- and EUH-phrases::

Aquatic Acute 1

Hazardous to the aquatic environment - Acute Hazard Category 1

Aquatic Chronic 1

Hazardous to the aquatic environment - Chronic Hazard Category 1

H400

Very toxic to aquatic life

H410

Very toxic to aquatic life with long lasting effects

R50/53

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

N Dangerous for the environment

Disclaimer:

This material safety data sheet does not constitute a guarantee of the properties of the product and is not a contractual legal report. The information is given in good faith on the basis of our best knowledge of the product at the indicated time. However, we cannot accept responsibility or liability for any consequences arising from its use, no warranty for correctness and completeness is given. We caution the users against the incurred possible risks when the product is used at other ends than the use for which it was initially planned. It is the user's responsibility during handling, storage and product use to consult the main regulatory texts in force regarding workers and environment protection.