

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

1.1. Product identifier

| | |
|------------------|--|
| Substance name | : ZINC OXIDE |
| EC Index-No. | : 030-013-00-7 |
| EC-No. | : 215-222-5 |
| CAS-No. | : 1314-13-2 |
| Formula | : ZnO |
| Molecular weight | : 81.39 g/mol |
| UFI Code | : No data available |
| Nanoform | : Substance is known to be on the EEA market in nanomaterial form. |

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

| | |
|------------------------------|---|
| Use of the substance/mixture | : Animal feed additive (trace element), zinc chemicals production, fertilizer industry and agricultural industry. |
| Restrictions on use | : No data available |

1.3. Details of the supplier of the safety data sheet

Tradege Foreign Trade Company
ADALET MAH. MANAS BLV. NO: 39 IC KAPI NO: 2511
BAYRAKLI/ IZMIR / TURKEY
Tel: +90 506 450 9208

export@tradege.com.tr & www.tradege.com.tr

1.4. Emergency telephone number

| | |
|-------------------------------|---------------------|
| National poison center (UZEM) | : +90 114 |
| Emergency number | : +90 312 267 53 90 |

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

| | |
|---|------|
| Hazardous to the aquatic environment - Acute Hazard, Category 1 | H400 |
| Hazardous to the aquatic environment - Chronic Hazard, Category 1 | H410 |

Full text of H statements : see section 16

Adverse physicochemical, human health and environmental effects

Very toxic to aquatic life with long lasting effects.

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 hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation. |

2.3. Other hazards

On the basis of available data, the product does not contain any PBT or vPvB in percentage \geq than 0.1%.

The product does not contain substances with endocrine disrupting properties in concentration \geq 0.1%.

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SECTION 3: Composition/information on ingredients

3.1. Substances

| Name | Product identifier | % | Classification according to Regulation (EC) No. 1272/2008 [CLP] |
|------------|--|----------|---|
| Zinc oxide | (CAS-No.) 1314-13-2 (EC-No.) 215-222-5 (EC Index-No.) 030-013-00-7 | 90 - 100 | Aquatic Acute 1, H400 M=1 Aquatic Chronic 1, H410 M=1 |

3.2. Mixtures

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

- First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing. If experiencing respiratory symptoms: Call a poison center or a doctor.
- First-aid measures after skin contact : Wash skin with plenty of water. If skin irritation occurs: Get medical advice/attention.
- First-aid measures after eye contact : Rinse eyes with water as a precaution. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
- First-aid measures after ingestion : Rinse mouth. Do not induce vomiting. Call a poison center or a doctor if you feel unwell.

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

- Symptoms/effects after inhalation : Dust of the product, if present, may cause respiratory irritation after an excessive inhalation exposure.

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

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Water spray. Dry powder. Foam.
- Unsuitable extinguishing media : None known.

5.2. Special hazards arising from the substance or mixture

- Hazardous decomposition products in case of fire; : Toxic fumes may be released.

5.3. Advice for firefighters

- Precautionary measures fire : Evacuate area.
- Firefighting instructions : Exercise caution when fighting any chemical fire. Keep upwind. Use water spray or fog for cooling exposed containers.
- Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

- Protective equipment : Wear recommended personal protective equipment.
- Emergency procedures : Ventilate spillage area. Avoid contact with skin and eyes. Do not breathe dust.
- Measures in case of dust release : Dust production: dust mask with filter type P2.

6.1.2. For emergency responders

- Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

- For containment : Collect spillage.
- Methods for cleaning up : Mechanically recover the product. Avoid dust formation.
- Other information : Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.

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SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Precautions for safe handling : Ensure good ventilation of the work station. Avoid dust formation. Wear personal protective equipment.
- Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

- Storage conditions : Keep container tightly closed and dry. Keep in a cool, well-ventilated place away from incompatible materials.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1 National occupational exposure and biological limit values

No additional information available

8.1.2. Recommended monitoring procedures

No additional information available

8.1.3. Air contaminants formed

No additional information available

8.1.4. DNEL and PNEC

Derived No Effect Level (DNEL) No information available

Predicted No Effect Concentration (PNEC)

| | |
|------------------------------------|----------------|
| Fresh water | 0.02 mg/l |
| Fresh water sediment | 117.8 mg/kg dw |
| Marine water | 0.006 mg/l |
| Marine water sediment | 56.5 mg/kg dw |
| Microorganisms in sewage treatment | 0.1 mg/l |
| Soil (Agriculture) | 35.6 mg/kg |

8.1.5. Control banding

No additional information available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Appropriate engineering controls:

Ensure good ventilation of the work station.

8.2.2. Personal protection equipment

Personal protective equipment symbol(s):



8.2.2.1. Eye and face protection

Eye protection:

In case of dust production: protective goggles (EN 166). Safety glasses. EN 166

8.2.2.2. Skin protection

Hand protection:

protective gloves. EN 374. Gloves must be replaced after each use and whenever signs of wear or perforation appear

8.2.2.3. Respiratory protection

Respiratory protection:

Wear suitable respiratory equipment in case of insufficient ventilation

8.2.2.4. Thermal hazards

No additional information available

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8.2.3. Environmental exposure controls

Environmental exposure controls:

Avoid release to the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

| | |
|--|-----------------------|
| Physical state | : Solid |
| Appearance | : Powder, fine |
| Colour | : Yellow, brown |
| Odour | : Characteristics |
| Odour threshold | : No data available |
| pH | : 7 - 8 |
| Relative evaporation rate (butylacetate=1) | : No data available |
| Melting point | : 1975 °C |
| Freezing point | : Not applicable |
| Boiling point | : No data available |
| Flash point | : Not applicable |
| Auto-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 | : Not applicable |
| Density | : 2 g/cm ³ |
| Solubility | : Insoluble in water |
| Log Pow | : No data available |
| Viscosity, kinematic | : Not applicable |
| Viscosity, dynamic | : No data available |
| Explosive limits | : Not applicable |

9.2. Other information

9.2.1- Information with regard to physical hazard classes:

No additional information available

9.2.2- Other safety characteristics:

| | |
|----------------------|------------------|
| Explosive properties | : Not explosive |
| Oxidising properties | : Non oxidizing. |

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials

Strong oxidizing agents, moisture

10.6. Hazardous decomposition products

Hazardous decomposition products in case of fire; zinc oxides

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

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

Zinc oxide (1314-13-2)

| | |
|---------------|--------------|
| LD50 oral rat | > 5000 mg/kg |
|---------------|--------------|

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| Zinc oxide (1314-13-2) | |
|------------------------|---------------|
| LD50 dermal rat | > 2000 mg/kg |
| LC50 inhalation rat | > 5.7 mg/l/4h |

| | |
|-----------------------------------|---|
| Skin corrosion/irritation | : Based on available data, the classification criteria are not met. May cause slight skin irritation (itching, redness, blistering) |
| Serious eye damage/irritation | : Based on available data, the classification criteria are not met. May cause slight irritation |
| 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 |
| 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. Dust of the product, if present, may cause respiratory irritation after an excessive inhalation exposure. |
| 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 |

11.2. Information on other hazards

11.2.1- Endocrine disrupting properties

No test data is available for the mixture.

11.2.2- Other information

No test data is available for the mixture.

SECTION 12: Ecological information

12.1. Toxicity

| | |
|--------------------------|---|
| Acute aquatic toxicity | : Very toxic to aquatic life. |
| Chronic aquatic toxicity | : Very toxic to aquatic life with long lasting effects. |

| Zinc oxide (1314-13-2) | |
|------------------------|-------------------------------------|
| LC50 fish | 315 µg/l (Thymallus arcticus) |
| EC50 daphnia | 1220 µg/l (Daphnia magna) |
| NOEC chronic fish | 0.44 mg/l 72d (Oncorhynchus mykiss) |
| NOEC chronic crustacea | 0.031 mg/l 50d (Daphnia magna) |

12.2. Persistence and degradability

Not applicable. The product is insoluble in water.

12.3. Bioaccumulative potential

Low bioaccumulation potential due to the low log Kow < 3

12.4. Mobility in soil

Not applicable. The product is insoluble in water.

12.5. Results of PBT and vPvB assessment

The product does not meet the PBT and vPvB classification criteria.

12.6. Endocrine disrupting properties

No data available.

12.7. Other adverse effects

No additional information available

SECTION 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 | : Disposal through controlled incineration or authorised waste dump. |
| Product/Packaging disposal recommendations | : Avoid release to the environment. |

SECTION 14: Transport information




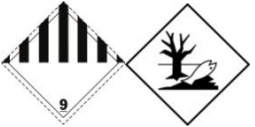
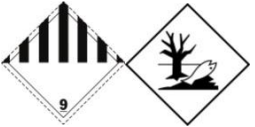
In accordance with ADR / RID / IMDG / IATA / ADN

| ADR | IMDG | IATA | ADN | RID |
|---|---|---|---|---|
| 14.1. UN number | | | | |
| 3077 | 3077 | 3077 | 3077 | 3077 |
| 14.2. UN proper shipping name | | | | |
| ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc oxide) | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc oxide) | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc oxide) | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc oxide) | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc oxide) |

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| ADR | IMDG | IATA | ADN | RID |
|---|--|---|---|---|
| Transport document description | | | | |
| UN 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc oxide), 9, III, (-) | UN 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc oxide), 9, III, MARINE POLLUTANT | UN 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc oxide), 9, III | UN 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc oxide), 9, III | UN 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc oxide), 9, III |
| 14.3. Transport hazard class(es) | | | | |
| 9 | 9 | 9 | 9 | 9 |
|  |  |  |  |  |
| 14.4. Packing group | | | | |
| III | III | III | III | III |
| 14.5. Environmental hazards | | | | |
| Dangerous for the environment : Yes | Dangerous for the environment : Yes Marine pollutant : Yes | Dangerous for the environment : Yes | Dangerous for the environment : Yes | Dangerous for the environment : Yes |

14.6. Special precautions for user

- Overland transport

| | |
|---|---|
| Classification code (ADR) | : M7 |
| Special provisions (ADR) | : 274, 335, 375, 601 |
| Limited quantities (ADR) | : 5kg |
| Excepted quantities (ADR) | : E1 |
| Packing instructions (ADR) | : P002, IBC08, LP02, R001 |
| Special packing provisions (ADR) | : PP12, B3 |
| Mixed packing provisions (ADR) | : MP10 |
| Portable tank and bulk container instructions (ADR) | : T1, BK1, BK2, BK3 |
| Portable tank and bulk container special provisions (ADR) | : TP33 |
| Tank code (ADR) | : SGAV, LGBV |
| Vehicle for tank carriage | : AT |
| Transport category (ADR) | : 3 |
| Special provisions for carriage - Packages (ADR) | : V13 |
| Special provisions for carriage - Bulk (ADR) | : VC1, VC2 |
| Special provisions for carriage - Loading, unloading and handling (ADR) | : CV13 |
| Hazard identification number (Kemler No.) | : 90 |
| Orange plates | :  |

| | |
|-------------------------------|------|
| Tunnel restriction code (ADR) | : - |
| EAC code | : 2Z |

- Transport by sea

| | |
|-----------------------------------|---------------------------|
| Special provisions (IMDG) | : 274, 335, 966, 967, 969 |
| Packing instructions (IMDG) | : P002, LP02 |
| Special packing provisions (IMDG) | : PP12 |
| IBC packing instructions (IMDG) | : IBC08 |
| IBC special provisions (IMDG) | : B3 |
| Tank instructions (IMDG) | : T1, BK1, BK2, BK3 |
| Tank special provisions (IMDG) | : TP33 |
| EmS-No. (Fire) | : F-A |
| EmS-No. (Spillage) | : S-F |
| Stowage category (IMDG) | : A |

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Stowage and handling (IMDG) : SW23

- Air transport

PCA Excepted quantities (IATA) : E1
PCA Limited quantities (IATA) : Y956
PCA limited quantity max net quantity (IATA) : 30kgG
PCA packing instructions (IATA) : 956
PCA max net quantity (IATA) : 400kg
CAO packing instructions (IATA) : 956
CAO max net quantity (IATA) : 400kg
Special provisions (IATA) : A97, A158, A179, A197
ERG code (IATA) : 9L

- Inland waterway transport

Classification code (ADN) : M7
Special provisions (ADN) : 274, 335, 375, 601
Limited quantities (ADN) : 5 kg
Excepted quantities (ADN) : E1
Equipment required (ADN) : PP, A
Number of blue cones/lights (ADN) : 0
Additional requirements/Remarks (ADN) : * Only in the molten state. ** For carriage in bulk see also 7.1.4.1. *** Only in the case of transport in bulk.

- Rail transport

Classification code (RID) : M7
Special provisions (RID) : 274, 335, 375, 601
Excepted quantities (RID) : E1
Packing instructions (RID) : P002, IBC08, LP02, R001
Special packing provisions (RID) : PP12, B3
Mixed packing provisions (RID) : MP10
Portable tank and bulk container instructions (RID) : T1, BK1, BK2, BK3
Portable tank and bulk container special provisions (RID) : TP33
Tank codes for RID tanks (RID) : SGAV, LGBV
Transport category (RID) : 3
Special provisions for carriage – Packages (RID) : W13
Special provisions for carriage – Bulk (RID) : VC1, VC2
Special provisions for carriage - Loading, unloading and handling (RID) : CW13, CW31
Colis express (express parcels) (RID) : CE11
Hazard identification number (RID) : 90

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

15.1.1. EU-Regulations

REACH Annex XVII (Restriction List)

No REACH Annex XVII restrictions

REACH Annex XIV (Authorisation List)

Not applicable.

REACH Candidate List (SVHC)

Not applicable.

PIC Regulation (Prior Informed Consent)

is not subject to Regulation (EU) No 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of hazardous chemicals.

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POP Regulation (Persistent Organic Pollutants)

is not subject to Regulation (EU) No 2019/1021 of the European Parliament and of the Council of 20 June 2019 on persistent organic pollutants

Ozone Regulation (1005/2009)

Not applicable.

Explosives Precursors Regulation (2019/1148)

Contains no substance subject to Regulation (EU) 2019/1148 of the European Parliament and of the Council of 20 June 2019 on the marketing and use of explosives precursors.

Drug Precursors Regulation (273/2004)

Contains no substance(s) listed on the Drug Precursors list (Regulation EC 273/2004 on drug precursors)

15.1.2. National regulations

No additional information available

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

SECTION 16: Other information

Abbreviations and acronyms:

| | |
|-------|---|
| ADN | European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways |
| ADR | European Agreement concerning the International Carriage of Dangerous Goods by Road |
| CLP | Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008 |
| EC50 | Median effective concentration |
| IATA | International Air Transport Association |
| IMDG | International Maritime Dangerous Goods |
| LC50 | Median lethal concentration |
| LD50 | Median lethal dose |
| NOEC | No-Observed Effect Concentration |
| PBT | Persistent Bioaccumulative Toxic |
| REACH | Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006 |
| RID | Regulations concerning the International Carriage of Dangerous Goods by Rail |
| SDS | Safety Data Sheet |
| vPvB | Very Persistent and Very Bioaccumulative |

Full text of H- and EUH-statements:

| | |
|-------------------|---|
| 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. |

DISCLAIMER OF LIABILITY:

The information in this SDS was obtained from sources which we believe are reliable. However, the information is provided without any warranty, express or implied, regarding its correctness.