

SAFETY DATA SHEET (SDS)

ZINC OXIDE

According to Regulation (EC) 1907/2006 and 453/2010

Version 4.0 - Revision Date 24.04.2013

SECTION 1 – IDENTIFICATION OF THE SUBSTANCE AND OF THE COMPANY

1.1 Product Identifiers

Product Name: Zinc Oxide
Chemical name: Zinc Oxide
CAS Number: 1314-13-2
Chemical formula: ZnO
EINECS Number: 215-222-5
EC Number: 215-222-5
Index Number: 030-013-00-7
Reach Number: 01-2119463881-32 -XXXXX

This Safety Data Sheet covers the supply of zinc oxide, white zinc oxide, zinc oxide and zinc oxide feed grade.

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

Primary Use: Chemical reagent for rubber compounding, ceramics, animal feed additive (trace element), manufacturing of zinc containing chemical substances, production, paints, plastics, polymers, cosmetics, pharmaceuticals, electronics, trace elements in fertilizers. chemical industries

1.3 Details of the supplier of the safety data sheet

Supplier: NUMINOR CHEMICAL INDUSTRIES LTD.
Address: P. O. BOX 92,
MAALOT 24952,
ISRAEL.
Tel: + 972-4-9978220
Fax: + 972-4-9976062
E-Mail: zinc@numinor.com
Web Site: www.numinor.com

- 1.4 Emergency Contact:** Mr. Alan Kantor
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SECTION 2 - HAZARDS IDENTIFICATION

2.1 Classification of substance or mixture

Classification according to Regulation (EC) 1272/2008 (EU 'CLP' regulation) and GHS.

Acute aquatic toxicity (category 1)
Chronic aquatic toxicity (category 1)

Classification according to EU Directive 67/548/EEC

N, R50/53

2.2 Label Elements

Labeling according to regulation (EC)1272/2008

GHS Pictogram:



GHS 09

Signal Word:

Warning

Hazard Statements

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

Precautionary Statements

P273 Avoid release to the aquatic environment
P391 Collect spillage
P501 Dispose of contents/containers as hazardous waste in accordance with applicable legislation (state the applicable legislation)

2.3 Other Hazards

No PBT vPvP according to regulation EC 1907/2006

SECTION 3 – COMPOSITION / INFORMATION ON INGREDIENTS

3.1 Substances

This material is a substance.

CHEMICAL NAME	CAS NUMBER	EC NUMBER	INDEX NUMBER	CONCENTRATION
Zinc oxide	1314-13-2	215-222-5	030-013-00-7	90-100%

SECTION 4 - FIRST AID MEASURES

4.1 Description of First Aid Measures

General Advice

Remove from source of exposure.

Although this material is not classified as hazardous to health, exposure of first aiders should be minimized, particularly inhalation of dust and fumes. In any case of feeling unwell, consult a physician and showing him this MSDS.

Inhalation

Move person to fresh air. If person experiences irritation or difficulty breathing, or feeling unwell seek medical advice. If not breathing or if breathing is difficult apply artificial respiration.

Ingestion

Immediately rinse mouth with water. Give large quantities of water to drink, seek medical advice. If unconscious, never give a person to drink. Do not induce vomiting!

Skin contact

Wash immediately with plenty of water and soap, and then rinse thoroughly with water.

Eye contact

Rinse immediately with clean water for at least 15 minutes. Keep eyelids open. Remove immediately any contact lenses. In case of irritation seek medical advice.

Protection of rescue personnel

Avoid all unnecessary exposure. Use appropriate protection (see Section 9).

4.2 Most important symptoms and effects, both acute and delayed

Zinc oxide dust and fumes can irritate respiratory tracts. Prolonged skin contact can cause severe dermatitis called oxide pox. Dust and fume can cause zinc fever and chills. High levels of dust can cause a metallic taste, fatigue weakness coughing, nausea and muscular pain. Severe overexposure may result in bronchitis and pneumonia with bluish tint on skin, liver enzyme abnormalities and diaree.

4.3 Indication of any immediate medical attention and special treatment needed

No data available

SECTION 5 – FIRE, FIGHTING & EXPLOSION DATA

5.1 Extinguishing media

This material is not combustible. Use extinguishing media based on surrounding materials.

5.2 Special hazards arising from the substances or mixture

Release of zinc oxide

5.3 Advice for fire fighters

Wear self-contained breathing apparatus. Wear protective clothes. (Self-contained breathing apparatus with full face shield) Prevent fire-fighting water from entering watercourses, drains or the sewage system. (Environmental pollutant).

SECTION 6 - ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

This material is not classified as hazardous to health but exposure should be minimized, particularly inhalation of dust. Do not undertake actions that will create airborne dust. Avoid breathing dust. Apply approved respirator (of type FFP2 in accordance with EM 140 or 149. Evacuate people from area of spillage.

6.2 Environmental precautions

Do not allow to enter sewage system, drains and waterways.
Do not allow to enter surface water drains and ground water.
Prevent soil contact.

6.3 Methods and material for containment and cleaning up

Sweep up and shovel into suitable containers for disposal. Re-use or recycle waste
Prevent dust generation.
Collect spilled material in predominated containers.
All contaminated materials from the cleaning-up operation must be disposed of as hazardous waste.

- 6.4 Reference to any other sections:**
See section 13 for disposal information

SECTION 7 - HANDLING AND STORAGE

7.1 Precautions for safe handling:

Powder may be irritating to the skin or eyes by mechanical action. Dust may be irritating to the respiratory system. Minimize dust generation and exposure to dust. Do not breathe dust. Avoid contact with skin and eyes.

See section 8.2 for details of personal protective equipment

Follow good hygiene practices: do not eat, drink or smoke in the workplace. Wash hands after use. Remove contaminated clothing before entering eating and smoking areas.

7.2 Conditions for safe storage, including any incompatibilities

Keep original packaging or other sealed containers. Store tightly closed in a ventilated area.

Keep in a cool and dry place, away from incompatible chemicals (see section 10.5)

7.3 Specific end use(s)

None identified

SECTION 8 - EXPOSURE CONTROL / PERSONAL PROTECTION

8.1 Control parameters

Prevent the formation of dust

TWA 8h 1 mg/m³

STEL 15 min 3 mg/m³

8.2 Exposure controls

Personal protective equipment

Respiratory protection

Respiratory protection equipment necessary when dust is apparent Type P1 respirator (EN 143).

Hand protection

Protective gloves - material: leather gloves, cotton gloves, rubber gloves

Skin protection .

Work clothes. Long sleeves

Eye protection .

Chemical goggles or safety glasses

Engineering measures

Mechanical ventilation is recommended.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemicals properties:

Appearance:	White to slightly yellowish tinted (white Zinc Oxide), Yellow or brown powder (feed grade)
Odour:	Odourless.
Odour threshold:	Not applicable
pH:	Not Applicable
Melting point:	1975 °C
Boiling point:	Not applicable (solid)
Flash point:	Not flammable
Evaporation rate:	Not applicable (solid)
Flammability:	Not flammable
Upper/lower flammability or explosive limits:	Not flammable
Vapour pressure:	Not applicable (stable solid)
Vapour density:	Not applicable (stable solid)
Relative density;	0.9-1.2 g/cm ³
Bulk density:	app 1.1 g/cm ³
Solubility in water:	2.9 mg / liter (20°C)
Solubility in other ingredients:	Negligible.
Partition coefficient	
Octanol/water:	Not applicable (essentially insoluble in water and octanol)
Auto-ignition temperature:	Not flammable
Decomposition temperature	Not available
Viscosity	Not applicable (solid)
Explosion properties:	Not explosive
Oxidising properties:	Not oxidising.

9.2 Other information:

No additional data available

SECTION 10 - STABILITY & REACTIVITY DATA

10.1 **Reactivity**

Stable under normal conditions avoid contact with incompatible materials.

10.2 **Chemical stability**

Stable under normal conditions avoid contact with incompatible materials.

10.3 **Possibility of hazardous reactions**

None

10.4 **Conditions to avoid**

Keep away from acids and bases.

10.5 **Incompatible materials**

Acids and base. Contact with strong acids may cause vigorous reactions with the development of heat. Contact with base will form water and zincates.

10.6 **Hazardous decomposition products**

None

SECTION 11 – TOXICOLOGICAL INFORMATION

11.1 **Information on toxicological effects**

Acute toxicity

Digestion:

LD 50 (mouse): 7950 kg/mg OECD 401

LD 50 (rat) : >5000 mg/kg OECD 401

Inhalation

LC Inhalation – Dust and mist(Rat): > 5.7 mg/l, 4 hours

Skin Corrosion / irritation

Skin, rabbit, 500 mg, 24 hr, mild.

Zinc oxide is irritant on skin in the case of humans.

Skin inflammation is characterized by itching, scaling, reddening and occasionally blistering.

Serious eye damage/irritation

Slightly irritating (rabbit). Slight erythema of the conjunctiva for 2 days, no effect on iris and cornea.

Respiratory and Skin Sensitization

Not a skin sensitizer

Carcinogenicity

As there is no experimental or epidemiological evidence for carcinogenicity, (ECHA risk assessment report on Zinc Oxide, 2008)

Mutagenicity

As there is no experimental or epidemiological evidence for carcinogenicity, (ECHA risk assessment report on Zinc Oxide, 2008).

Reproductive Toxicity

Given the data available, it is concluded that zinc oxide is of no concern for reproductive toxicity (ECHA risk assessment report on Zinc Oxide, 2008)

Specific Target Toxicity (single exposure)

No experimental or epidemiological sufficient evidence for specific target organ toxicity (single exposure) – No classification for target organ toxicity (STOT-SE), (CSR zinc oxide, 2010)

Specific Target Toxicity (single exposure)

No experimental or epidemiological sufficient evidence for specific target organ toxicity (single exposure) – No classification for target organ toxicity (STOT-RE), (CSR zinc oxide, 2010)

Aspiration hazard

No data available

Additional Information:

Inhalation

May cause mechanical irritation of the respiratory tract. A few sources claim that finely divided zinc oxide dust can cause "metal fume fever." Zinc oxide dust is generally considered a nuisance dust; adverse effects are unlikely when exposures are kept under reasonable control. Inhalation of high concentrations of Zinc Oxide fume or dust may cause "Metal Fume Fever." Symptoms of metal fume fever may include a

flu-like

condition involving headache, chills, fever, sweats, nausea, vomiting, cough, muscle aches and pains, and difficulty breathing, ;pulmonary edema. May also affect the liver

Eyes

May cause mechanical eye irritation and conjunctivitis, redness or pain

Ingestion

May cause digestive tract irritation although Zinc oxide has a low toxicity by oral exposure route. Prolonged or repeated ingestion of zinc oxide may affect blood, metabolism, and the thyroid.

SECTION 12 - ECOLOGICAL INFORMATION

12.1 Toxicity

Acute toxicity for fish (*Oncorhynchus mykiss*): LC(50) (96h) 0.14-0.26 mg Zn²⁺/L
Acute toxicity for ctustacea (*Daphnia magna*): EC(50) (48h) 0.04 – 0.86 mg Zn²⁺/L
Acute toxicity for algae (*Selenastrum capriocornutum*): EC(50) (72h) 0.136 – 0.150 mg Zn²⁺

12.2 Persistence and biodegradability

Not relevant (insoluble inorganic compound)

12.3 Bioaccumulative potential

No - Zinc is a natural, essential element, which is needed for the optimal growth and development of all living organisms.

12.4 Mobility in soil

Not Applicable – Zinc oxide is insoluble in water

12.5 Results of PBT and vPvB assessment

Zinc Oxides are not PBT or vPvB

12.6 Other adverse effects

Very toxic to aquatic life

SECTION 13 - DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product

Dispose of as hazardous waste, to be treated in accordance with local regulations. Keep waste separate. Because of possible pollution, remove as industrial waste or hazardous waste according to the degree and nature of pollution (EWC code 060316, 150110). Waste should be disposed of in a permitted chemical waste facility. This material and its container should be labeled hazardous waste.

Packaging

Clean, uncontaminated packaging can be recycled. Packaging contaminated with the product must be disposed of as hazardous waste, and be treated according to local regulations

SECTION 14 - TRANSPORT INFORMATION

		ADR/RID	ADNR	IMDG	IATA
14.1	UN number	3077	3077	3077	3077
14.2	UN proper shipping name	Environmentally hazardous substance, solid, n.o.s. (zinc oxide)			
14.3	Transport hazard class(s)	9	9	9	9
14.4	Packing group	III	III	III	III
14.5	Environmental hazards	yes	yes	Marine pollutant, Yes	yes
14.6	Special precautions for user	None identified			
14.7	Transport in bulk according to Annex II of MARPOL 73/78 and IBC Code				

SECTION 15 – REGULATORY INFORMATION

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

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

Control of Substances Hazardous to Health Regulations (COSHH) 2002 SI 2002/2677 and COSHH Essentials: Easy steps to control chemicals - Control of Substances Hazardous to Health Regulations HSG193.

Inventory Status

Listed in: Australia (AICS) Canada (DSL/NDSL) China (IECSC) European Union (EINECS/ELINCS) South Korea (KECI)

Philippines (PICCS) New Zealand Inventory (NZIoC)

- HMIS (Hazardous Materials : Identification system) classification

Health	2
Fire	0
Reactivity	0
Personal Protection	E

2 = Temporary or minor injury may occur.
0 = Materials that will not burn.
0= Materials that are normally stable, even under fire conditions, and will not react with water, polymerize, decompose, condense, or self-react. Non-explosives.



- NFPA : (National Fire Protection Association)

Health	1
Fire	0
Reactivity	0
Personal Protection	

1 = Exposure would cause irritation with only minor residual injury
0 = Materials that will not burn under typical fire conditions
0=Normally stable, even under fire exposure conditions, and are not reactive with water.

15.2 Chemical safety assessment

No data available

SECTION 16 - OTHER INFORMATION

Text of H-code(s) and R-phrase(s) mentioned in Section 2

- 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 to environment

S – Phrase according to classification EU Directive 67/548/EEC

- S 60 This material and its container must be disposed of as hazardous waste.
S 61 Avoid release to the environment. Refer to special instructions/Safety data sheets.

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