

Section 1: Identification of the Substance/Mixture and of the Company/Undertaking

Product Identifier:

Identification as on the label/Trade name: Depleted Zinc Oxide, Depleted in Isotope Zn-64.

Molecular weight: 81.39

Chemical formula: ZnO

Synonyms: Actox 14, Actox 16, Actox 216, Al3-00277, Akro-zinc bar 85, Akro-zinc bar 90, Amalox, Azo-33, Azo-55, Azo-66, Azo-77, Azodox-55, Azodox-55TT, Azo-55TT, Azo-66TT, Azo-77TT, Cadox XX 78, Chinese White, C.I. 77947, C.I. Pigment White 4, Cynku tlenek (Polish), Electox 2500, Emanay zinc oxide, EMAR, Felling zinc oxide, Flowers of zinc, GIAP 10, Green seal-8, Hubbuck's White, Kadox 15, Kadox-25, Kadox 72, K-Zinc, Outmine, Ozide, Ozlo, Permanent White, Philosopher's wool, Powder base 900, Protox type 166, Protox type 167, Protox type 168, Protox type 169, Protox type 267, Protox type 268, Red Seal 9, Snow White, Unichem ZO, Vandem VAC, Vandem VOC, White seal-7, XX 78, XX 203, XX 601, Zinca 20, Zincite, Zincoind, Zinc White, ZN-0401 E 3/16", Zn 0701T.

Details of the supplier of the Safety Data Sheet:

Neonest AB
Storgatan 70C, Solna
SE-17152
Sweden

Contact details:

+46-76-219-9731

24-hour Emergency Contact:

Swedish Poisons Centre
Phone: 112 - Ask for Poisons Information, 112 – begär Giftinformation.

Other International Contacts:

CHEMTREC 24-hour: +1-703-741-5500 (US + Worldwide)
NHS: 111 (UK)
Charite: +49 30 450 531 000 (Netherlands)
INTCF: +34 917689800 (Spain)
CapTv: +33 1 40 05 48 48 (France)

Section 2: Hazards Identification

Classification of the substances or mixture:

The mixture is classified according to: Regulation EC 1272/2008 [EU-GHS/CLP]

Hazard classes/Hazard categories:

Aquatic Acute (Category 1)
Aquatic Chronic (Category 1)

Hazard statement:

H400
H410

Label elements:
Hazard pictograms:

Signal Words: 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 environment.

P391 Collect spillage.

P501 Dispose of contents/container in accordance with local/national regulations.

Section 3: Composition/Information on Ingredients
Substance/Mixture: Substance.

Ingredients:

Substance name (IUPAC/EC)	CAS-No.	Concentration % by weight	Classification EC1272/2008
	EC-No.		
Zinc oxide	1314-13-2	>99.9%	Aquatic Acute 1 H400 Aquatic Chronic 1H410
	215-222-5		

For explanation of abbreviations see Section 16.

Section 4: First-Aid Measures
Description of first aid measures:
General information: In case of persisting adverse effects, consult a physician. Remove contaminated clothing and shoes immediately, and launder thoroughly before reusing.

After inhalation: Ensure supply of fresh air. Take medical treatment.

After skin contact: When in contact with the skin, clean with soap and water.

After eye contact: Separate eyelids, wash the eyes thoroughly with water (15 min.). Eye treatment by an oculist.

After ingestion: Rinse out mouth and give plenty of water to drink. Administer activated charcoal.

Most important symptoms and effects, both acute and delayed:
Skin contact: May cause skin irritation.

Skin absorption: May be harmful if absorbed through the skin.

Eye contact: May cause eye irritation.

Inhalation: Harmful if inhaled; material may be irritating to mucous membranes and upper respiratory tract.

Ingestion: May be harmful if swallowed.

Section 5: Fire-Fighting Measures

Extinguisher media:

Suitable extinguishing media: Product itself is non-combustible; adapt fire extinguishing measures to surrounding areas.

Special exposure hazards arising from the substance, combustion products, resulting gases: None known.

Special protective equipment for fire-fighters: Appropriate breathing apparatus may be required.

Other information: Collect contaminated firefighting water separately, must not be discharged into the drains.

Section 6: Accidental Release Measures

Personal precautions, protective equipment and emergency procedures:

Refer to protective measures listed in sections 7 (Handling and Storage) and 8 (Exposure Controls/Personal Protection). Avoid dust formation.

Environmental precautions: Do not discharge into the drains/surface waters/groundwater.

Methods and materials for containment and cleaning up:

Pick up mechanically. Avoid raising dust. Send in suitable containers for recovery or disposal.

Section 7: Handling and Storage

Precautions for safe handling:

Advice on safe handling: Provide good ventilation of working area (local exhaust ventilation, if necessary).

Advice on protection against fire and explosion: Keep away from sources of ignition - refrain from smoking. Take precautionary measures against static charges.

Conditions for safe storage, including any incompatibilities:

Requirements for storage rooms and vessels: Keep in original packaging, tightly closed.

Advice on storage assembly: Do not store together with foodstuffs. Do not store together with animal feedstocks. Do not store together with acids or bases.

Further information on storage conditions: Keep container tightly closed and dry in a cool, well-ventilated place.

Section 8: Exposure Controls/Personal Protection

Control parameters:

Occupational exposure limits:

List of approved workplace exposure limits (WELs) / EH40 total respirable dust: TWA 10 mg/m³

List of approved workplace exposure limits (WELs) / EH40 respirable dust: TWA 4 mg/m³

Exposure controls:

Appropriate engineering controls: A system of local and/or general exhaust is recommended to keep employee exposures below the exposure limits.

Individual protection measures, such as personal protective equipment:

Respiratory protection: If workplace exposure limits are exceeded, a respiration protection approved for this particular job must be worn.

Respiratory filter (part): P2.

Hand protection: Protective gloves (EN 374). Appropriate Material: rubber, leather, or cotton.

Eye protection: Safety glasses (EN 166).

Skin protection: Clothing as usual in the chemical industry.

Section 9: Physical and Chemical Properties

Information on basic physical and chemical properties

Appearance (form): Solid (powder).

Colour: Yellow - white.

Odour: Odourless.

Odour threshold: No data available.

pH (concentration): No data available.

Melting point/range (°C): 1,974 °C (3,585 °F; 2,247 K)

Boiling point/range (°C): No data available.

Flash point (°C): No data available.

Evaporation rate: No data available.

Flammability (solid, gas): No data available.

Ignition temperature (°C): No data available.

Upper/lower flammability/explosive limits: No data available.

Vapour pressure (20 °C): No data available.

Vapour density: No data available.

Relative density (25 °C): 5.68

Water solubility (g/L) at 17.8 °C: 0.0004 %

National Institute of Occupational Safety and Health (NIOSH), weblink: <https://www.cdc.gov/niosh/npg/>

n-Octanol/Water partition coefficient: No data available.

Auto-ignition temperature: No data available.

Decomposition temperature: No data available.

Viscosity, dynamic (mPa s): No data available.

Explosive properties: The substance or mixture is not classified as explosive.

Oxidising properties: The substance or mixture is not classified as oxidizing.

Section 10: Stability and Reactivity

Reactivity and stability: Stable under ordinary conditions of use and storage.

Conditions to avoid: None known.

Materials to avoid: Acids, bases.

Hazardous decomposition products: ZnO-fume can be generated during thermal processing.

Section 11: Toxicological Information

Information on toxicological effects:

Not classified based on available information.

Classification according to GHS (1272/2008/EG, CLP)

Skin corrosion/irritation:

Not classified based on available information.

Serious eye damage/eye irritation:

Not classified based on available information.

Respiratory or skin sensitisation:

Not classified based on available information.

Germ cell mutagenicity:

Not classified based on available information.

Carcinogenicity:

Not classified based on available information.

Reproductive toxicity:

Not classified based on available information.

Specific target organ toxicity – single exposure (STOT):

Not classified based on available information.

Specific target organ toxicity (STOT) – repeated exposure:

Not classified based on available information.

Aspiration toxicity:

Not classified based on available information.

Section 12: Ecological Information

Toxicity: Very toxic to aquatic life with long lasting effects.

Toxicity to Fish: LC50 - *Oncorhynchus mykiss* (rainbow trout) - 1.1 mg/l - 96.0 h

Toxicity to Daphnia and Other Aquatic Invertebrates: EC50 - *Daphnia magna* (Water flea) - 0.098 mg/l - 48 h

Persistence and degradability: No data available.

Bioaccumulative potential: No data available.

Mobility in soil: No data available.

Results of PBT& vPvB assessment: No data available.

Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Section 13: Disposal Considerations

Product: Allocation of a waste code number, according to the European Waste Catalogue, should be carried out in agreement with the regional waste disposal company.

Contaminated Packaging: Contaminated packaging should be emptied as far as possible and after appropriate cleansing may be taken for reuse. Packaging that cannot be cleaned should be disposed of in agreement with the regional waste disposal company.

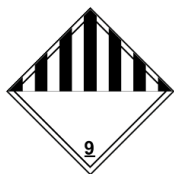
Section 14: Transport Information

UN number: 3077

UN proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.

Transport hazard class: Class 9

Transport hazard labels:

**Packing group:** III**Marine pollutant:** Yes.

Section 15: Regulatory Information

EU regulations:

Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I and II, as amended
Not listed.

Regulation (EC) No. 850/2004 on persistent organic pollutants, Annex I
Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 1 as amended
Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 2 as amended
Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 3 as amended
Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex V as amended
Not listed.

Regulation (EC) No. 166/2006 Annex II Pollutant Release and Transfer Registry
Not listed.

Regulation (EC) No. 1907/2006, REACH Article 59(10) Candidate List as currently published by ECHA
Not listed.

Authorisations:

Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorization, as amended
Not listed.

Restrictions on use:

Regulation (EC) No. 1907/2006 Annex XVII Substances subject to restriction on marketing and use
Not regulated.

Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use as amended
Not listed.

Directive 2004/37/EC on the protection of workers from the risks related to exposure to carcinogens and mutagens at work
Not regulated.

Directive 92/85/EEC: on the safety and health of pregnant workers and workers who have recently given birth or are breastfeeding.
Not regulated.

Other EU regulations:**Directive 2012/18/EU on major accident hazards involving dangerous substances**

Not listed.

Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work.

Always applicable.

Directive 94/33/EC on the protection of young people at work

Not listed.

Additional Information:**SARA 302 Components:** No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.**SARA 313 Components:** The following components are subject to reporting levels established by SARA Title III, Section 313: Zinc oxide / CAS No. 1314-13-2 / Revision Date 2007-03-01.**SARA 311/312 Hazards:** No SARA 311/312 Hazards.**Massachusetts Right to Know Components:** Zinc oxide / CAS No. 1314-13-2 / Revision Date 2007-03-01**Pennsylvania Right to Know Components:** Zinc oxide / CAS No. 1314-13-2 / Revision Date 2007-03-01**New Jersey Right to Know Components:** Zinc oxide / CAS No. 1314-13-2 / Revision Date 2007-03-01**California Prop. 65 Components:** This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.**Chemical safety assessment:** No Chemical Safety Assessment has been carried out.**Section 16: Other Information****List of abbreviations:**

ACGIH American Conference of Governmental Industrial Hygienists

ADR European Agreement Concerning the International Carriage of Dangerous Goods by Road

ALARA As Low As Is Reasonably Achievable

AMU Atomic Mass Unit

ANSI American National Standards Institute

BLS Basic Life Support

CAM Continuous Air Monitor

CAS Chemical Abstracts Service (division of the American Chemical Society)

CEN European Committee for Standardization

CERCLA Comprehensive Environmental Response Compensation and Liability Act

CLP Classification, Labelling and Packaging (European Union)

CPR Controlled Products Regulations (Canada)

CWA Clean Water Act (USA)

DAC Derived Air Concentration (USA)

DOE United States Department of Energy (USA)

DOT United States Department of Transportation (USA)

DSL Domestic Substances List (Canada)

EC50 Half Maximal Effective Concentration

EINECS European Inventory of Existing Commercial Chemical Substances

EHS Environmentally Hazardous Substance

ELINCS European List of Notified Chemical Substances
EMS Emergency Response Procedures for Ships Carrying Dangerous Goods
EPA Environmental Protection Agency (USA)
EPCRA Emergency Planning and Community Right-To-Know Act (EPCRA) of 1986
GHS Globally Harmonized System
HMIS Hazardous Materials Identification System (USA)
IARC International Agency for Research on Cancer
IATA International Air Transport Association
IBC Intermediate Bulk Containers
ICAO International Civil Aviation Organization
IDLH Immediately Dangerous to Life or Health
IMDG International Maritime Code for Dangerous Goods
LC50 Lethal concentration, 50 percent
LD50 Lethal dose, 50 percent
LDLO Lethal Dose Low
LOEC Lowest-Observed-Effective Concentration
MARPOL International Convention for the Prevention of Pollution from Ships
MSHA Mine Safety and Health Administration (USA)
NCRP National Council on Radiation Protection & Measurements (USA)
NDSL Non-Domestic Substances List (Canada)
NFPA National Fire Protection Association (USA)
NIOSH National Institute for Occupational Safety and Health (USA)
NOEC No Observed Effect Concentration
N.O.S. Not Otherwise Specified
NRC Nuclear Regulatory Commission (USA)
NTP National Toxicology Program (USA)
OSHA Occupational Safety and Health Administration (USA)
PBT Persistent Bioaccumulative and Toxic Chemical
PEL Permissible Exposure Limit
PIH Poisonous by Inhalation Hazard
RCRA Resource Conservation and Recovery Act (USA)
RCT Radiation Control Technician
REACH Registration, Evaluation, Authorisation and Restriction of Chemicals (Europe)
RID Regulations Concerning the International Transport of Dangerous Goods by Rail
RTECS Registry of Toxic Effects of Chemical Substances
SARA Superfund Amendments and Reauthorization Act (USA)
TDG Transportation of Dangerous Goods (Canada)
TIH Toxic by Inhalation Hazard
TLV Threshold Limit Value
TPQ Threshold Planning Quantity
TSCA Toxic Substances Control Act
TWA Time Weighted Average
UN United Nations (Number)
VOC Volatile Organic Compound
vPvB Very Persistent Very Bioaccumulative Chemical
WGK Wassergefährdungsklassen (Germany: Water Hazard Classes)

WHMIS Workplace Hazardous Materials Information System

References:

Not available.

Full text of any H-statements not written out in full under Sections 2 to 15:

H400 Very toxic to aquatic life.

H410 Very toxic to aquatic life with long lasting effects.

Revision information:

None.

Training information:

Follow training instructions when handling this material.

Further Information:

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.