Zinc Oxide

Extra pure powder for temporary dressings

Material safety data sheet (MSDS)
Version 1.0 / EN

11/09/2021

CONTENT

SECTION 1: PRODUCT AND COMPANY INFORMATION

1.1. Product identifier

Product Name	DSI Zinc Oxide Powder
Product Code	310-16200, 310-16250, 310-16300

Structure

Structure	White Solid (fine powder) Odor: Odorless

1.2. Details of the supplier of the safety data sheet:

Company Name	DSI Ltd.
Company Address	59 haAvoda str., Ashdod 7706300 Israel
Contact Name	Shlomi Krasner
Phone / Fax	+972.893.172.35
E-mail	info@dsisrael.com

Emergency telephone number:

Phone / Fax	+972.893.172.35

SECTION 2: HAZARDS IDENTIFICATION

2.1. OSHA/HCS Status:

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information crucial to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.

2.2. Classification

Hazard Class	Category
Skin Corrosion / Irritation	3
Specific Target Organ Toxicity (Single Exposure)	3
Aquatic Hazard (Acute)	1
Aquatic Hazard (Long-Term)	1

Label Elements
Hazard Symbols(s):

2.3. Signal Word(s): Warning

2.4. Hazard Statement(s):
Causes mild skin irritation.
May cause respiratory irritation.
Very toxic to aquatic life with long lasting effects.

2.5. Precautionary Statements:
Prevention: Wash hands thoroughly after handling. Avoid release to the environment
Response: Collect spillage.
Storage: Not applicable.
Disposal: Dispose of contents and container in accordance with all local, regional, national and international regulations.

2.6. Other Hazards
None known.

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENT

3.1. Substance/Mixture: Substance and impurities:

Chemical Name	CAS Number	Wt. %
Zinc Oxide	1314-13-2	99-100

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

SECTION 4: FIRST AID MEASURES

4.1. Eye Contact: Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 20 minutes.
Get medical attention if irritation occurs.

4.2. Inhalation: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Get medical attention if symptoms occur.

4.3. Skin Contact: Flush contaminated skin with plenty of water. Get medical attention if symptoms occur.

4.4. Ingestion: Wash out mouth with water. Never give anything by mouth to an unconscious person.
Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

4.5. Most Important Symptoms and Effects (Acute and Delayed)

Potential Acute Health Effects
Eye Contact: No know significant effects or critical hazards.
Inhalation: No know significant effects or critical hazards.
Skin Contact: No know significant effects or critical hazards.
Ingestion: No know significant effects or critical hazards.

Over-exposure Signs/Symptoms
Eye Contact: No know significant effects or critical hazards.
Inhalation: No know significant effects or critical hazards.
Skin Contact: No know significant effects or critical hazards.
Ingestion: No know significant effects or critical hazards.

4.6. Indication of any Immediate Medical Attention and Special Treatment Needed

Note to Physician: Treat symptomatically
Specific Treatments: No specific treatment.
Protection of first-aiders: No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

SECTION 5: MEASURES AND MEANS OF MAINTENANCE OF FIRE SAFETY

5.1. Extinguishing Media

Suitable: Use an extinguishing agent suitable for the surrounding fire..
Unsuitable: None known.

5.2. Specific Hazards Arising from Chemical

This material is very toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

5.3. Hazardous Thermal Decomposition Products

Decomposition products may include the following materials – metal oxide/oxides.

5.4. Protective Equipment and Precautions for Firefighters

Precautions: No special measures are required.
Equipment: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal Precautions, Protective Equipment, and Emergency Procedures

For Non-emergency Personnel: Provide adequate ventilation. Wear appropriate NIOSH approved respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For Emergency Responders: If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in “For nonemergency personnel”.

Environmental Precautions: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material may be harmful to the environment if released in large quantities. Collect spillage.

6.2. Methods and Material for Containment and Cleaning Up

Small Spill: Move containers from spill area. Vacuum or sweep up material and place in a designated, properly labeled waste container. Dispose of via a licensed waste disposal contractor.

Large Spill: Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for Safe Handling
Protective Measures: Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid release to the environment. Keep in theoriginal container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

General Hygiene Advice: Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. See also Section 8 for additional information on hygiene measures.

7.2. Conditions for Safe Storage, Including any Incompatibilities
Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control Parameters
Exposure Guidelines:

UNITED STATES

Chemical Name	ACGIH TLV (United States, 6/2013)	OSHA PEL (United States, 2/2013)	NIOSH REL (United States, 4/2013)
Zinc Oxide	STEL: 10 mg/m³ 15 min. Form: Respirable fraction TWA: 2 mg/m³ 8 hours. Form: Respirable fraction	TWA: 5 mg/m³ 8 hours. Form: Fume TWA: 5 mg/m³ 8 hours. Form: Respirable fraction TWA: 15 mg/m³ 8 hours. Form: Total dust	CEIL: 15 mg/m³ Form: Dust TWA: 5 mg/m³ 10 hours. Form: Dust and fumes STEL: 10 mg/m³ 15 min. Form: Fume

MEXICO

Chemical Name	NOM-010-STPS (Mexico, 9/2000)
Zinc Oxide	LMPE-PPT: 10 mg/m³ 8 hour(s). Form: Powder. LMPE-CT: 10 mg/m³ 15 minute(s). Form: smoke LMPE-PPT: 5 mg/m³ 8 hour(s). Form: smoke

8.2. Appropriate Engineering Controls
Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

8.3. Environmental Exposure Controls
Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.

8.4. Individual Protection Measures
Hygiene Measures: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Ensure that eyewash stations and safety showers are close to the workstation location.
Eye/Face Protection: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts.
Skin Protection:
Hand Protection: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Body Protection: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Recommended: Lab coat.
Other Skin Protection: Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Respiratory Protection: Use a properly fitted, particulate filter respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

SECTION 9: PHYSICAL/CHEMICAL CHARACTERISTICS

9.1. Information on basic physical and chemical properties:

Appearance:	White Solid (fine powder)
Odor:	Odorless
Odor threshold:	Not available.
pH:	Not available.
Melting point/freezing point:	Sublimation temperature: 1975°C (3587°F)
Initial boiling point and boiling range:	Not available.
Flash point:	Not applicable.
Evaporation rate:	Not available.
Flammability (solid, gas):	Not flammable.
Upper/lower flammability or explosive limits:	Not available.
Vapor pressure:	Not available.
Vapor density:	Not available.
Relative density:	5.61
Solubility(ies):	Very slightly soluble in the following material: cold water and hot water.
Partition coefficient (n-octanol/water):	Not available.
Auto-ignition temperature:	Not available.
Decomposition temperature:	Not available.
Viscosity:	Not available.

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity: No specific test data related to reactivity available for this product or its ingredients..

10.2. Chemical stability: The product is stable.

10.3. Possibility of hazardous reactions: Under normal conditions of storage and use, hazardous reactions will not occur.

10.4. Conditions to avoid: No specific data.

10.5. Incompatible materials:
Reactive or incompatible with the following materials: oxidizing materials.
Zinc oxide and chlorinated rubber reacts violently at 215 deg C.
Contact with magnesium and linseed oil can cause violent reaction.
Contact with strong acids may cause vigorous reaction.
Contact with strong bases will form water and soluble zincates.
Contact between zinc oxide and hydrogen fluoride, aluminum, hexachloroethane, zinc chloride or phosphoric acid, and water should be avoided.

10.6. Hazardous decomposition products: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Toxicological Information:

Acute Toxicity: There is no data available.

Irritation/Corrosion:

Chemical Name	Result	Species	Score	Exposure	Observation
Zinc Oxide	Eyes – Mild irritant Skin – Mild irritant	Rabbit Rabbit	– –	24 hours 500 mg 24 hours 500 mg	– –

Sensitization: There is no data available.
Carcinogenicity: There is no data available.
Specific target organ toxicity (single exposure): There is no data available.
Specific target organ toxicity (repeated exposure): There is no data available.
Aspiration hazard: There is no data available.
Information on Likely Routes of Exposure: Dermal contact. Eye contact. Inhalation. Ingestion.

11.2. Potential Acute Health Effects
Eye contact: No known significant effects or critical hazards.
Inhalation: No known significant effects or critical hazards.

Skin contact: No known significant effects or critical hazards.
Ingestion: No known significant effects or critical hazards.

11.3. Symptoms related to the physical, chemical and toxicological characteristics
Eye contact: No known significant effects or critical hazards.
Inhalation: No known significant effects or critical hazards.
Skin contact: No known significant effects or critical hazards.
Ingestion: No known significant effects or critical hazards.

11.4. Delayed and immediate effects and also chronic effects from short and long term exposure

Short Term Exposure
Potential immediate effects: No known significant effects or critical hazards.
Potential delayed effects: No known significant effects or critical hazards.

Long Term Exposure
Potential immediate effects: No known significant effects or critical hazards.
Potential delayed effects: No known significant effects or critical hazards.

Potential Chronic Health Effects
General: No known significant effects or critical hazards.
Carcinogenicity: No known significant effects or critical hazards.
Mutagenicity: No known significant effects or critical hazards.
Teratogenicity: No known significant effects or critical hazards.
Developmental effects: No known significant effects or critical hazards.
Fertility effects: No known significant effects or critical hazards.

11.5. Numeric Measures of Toxicity
Acute Toxicity Estimates: There is no data available.

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity:

Chemical Name	Result	Species	Observation
Zinc Oxide	Acute EC50 0.042 mg/L Fresh water Acute LC50 98µg/l Fresh water Acute LC50 1.1 ppm Fresh water Chronic NOEC 0.017 mg/L Fresh water	Algae – Pseudokirchneriella subcapitata – Exponential growth phase Daphnia – Daphnia magna – Neonate Fish – Oncorhynchus mykiss Algae – Pseudokirchneriella subcapitata – Exponential growth phase	72 hours 48 hours 96 hours 72 hours

Persistence and degradability: There is no data available.
Bioaccumulative potential:

Product/ Ingredient Name	LogPow	BCF	Potential
Zinc Oxide	–	60960	high

Mobility in soil:
Soil/Water Partition Coefficient (Koc) – There is no data available.
Other adverse effects: No known significant effects or critical hazards.

SECTION 13: DISPOSAL CONSIDERATION

13.1. Disposal Methods:
The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and nonrecyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling empty containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: TRANSPORT INFORMATION

14.1. Transport Information

	DOT/MEX Classification	IMDG	IATA
UN Number	Not regulated	UN3077	UN3077
UN Proper Shipping Name	–	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc oxide)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc oxide)
Transport Hazard Classes	–	Warning	Warning
Packing Group	–	III	III
Environmental Hazards	Yes.	Yes.	Yes.

Additional Information	Remarks This product is only transported by road and rail.	The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg. Emergency schedules (EmS) F-A, S-F	The environmentally hazardous substance mark is not required when transported in sizes of ≤5 L or ≤5 kg.

14.2. Special Precautions for the User:
Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

14.3. Transport in Bulk According to Annex II or MARPOL 73/78 and the IBC Code: Not available

SECTION 15: OTHER INFORMATION

Since the working conditions of the final user are unknown, the information presented in this safety data sheet is based on the current level of our knowledge, based on national and general standards.
The product should not be used for any other purpose than those indicated under heading without first receiving written instructions for use. The user must take all necessary measures to comply with the requirements and rules of the law. The information in this safety data sheet should be considered as a description of the safety requirements that apply to our product and does not guarantee its properties.