

Material Safety Data Sheet (MSDS)

Product Name: Zinc Oxide Rubber Grade

MSDS Generate Date: 20-05-2017

Revision Date: 30-12-2024

Supplier:

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1. Identification of the Substance and Company

Product Name: Zinc Oxide Rubber Grade

Chemical Name: Zinc Oxide

Synonyms: Zinc White, Zinc Monoxide, French Process Zinc Oxide

CAS Number: 1314-13-2

Molecular Formula: ZnO

Molecular Weight: 81.38 g/mol

Recommended Use:

Activator for rubber vulcanization, rubber compounding, tires, tubes, footwear, conveyor belts, rubber hoses, adhesives, ceramics, paints, coatings, and various industrial applications.

2. Hazard Identification

GHS Classification: Zinc Oxide Rubber Grade is generally classified as:

- Hazardous to the Aquatic Environment (Acute) – Category 1
- Hazardous to the Aquatic Environment (Chronic) – Category 1

The product is not normally hazardous to human health under recommended conditions of use; however, dust may cause mechanical irritation.

Hazard Statements:

- Very toxic to aquatic life.
- Very toxic to aquatic life with long-lasting effects.
- Dust may cause temporary irritation to the eyes and respiratory tract.

Precautionary Statements:

- Avoid release to the environment.
- Avoid breathing dust.
- Wear suitable eye protection.
- Wash thoroughly after handling.
- Collect spilled material.

3. Composition / Information on Ingredients

Chemical Name: Zinc Oxide

CAS Number: 1314-13-2

Molecular Formula: ZnO

Chemical Family: Inorganic Metal Oxide

Purity: Typically 99.0% minimum (Rubber Grade)

The product consists primarily of high-purity zinc oxide manufactured by the French or American process. Minor trace impurities are maintained within applicable industrial quality specifications.

4. First Aid Measures

Inhalation: Move the affected person to fresh air. If irritation, coughing, or breathing difficulty persists, obtain medical attention.

Skin Contact: Wash thoroughly with soap and water. Remove contaminated clothing.

Eye Contact: Flush immediately with plenty of clean water for at least 15 minutes while holding eyelids open. Remove contact lenses if present. Seek medical attention if irritation persists.

Ingestion: Rinse mouth thoroughly with water. Drink water if conscious. Seek medical advice if a large quantity has been swallowed.

Most Important Symptoms

- Mild respiratory irritation

- Temporary eye irritation
- Mild skin irritation
- Gastrointestinal discomfort after excessive ingestion

5. Fire Fighting Measures

Suitable Extinguishing Media: Use extinguishing media appropriate for the surrounding fire.

Fire Hazards: The product is non-combustible and does not support combustion.

Hazardous Decomposition Products: At extremely high temperatures, zinc oxide fumes may be generated.

Protective Equipment: Firefighters should wear self-contained breathing apparatus (SCBA) and appropriate protective clothing.

6. Accidental Release Measures

Personal Precautions:

- Avoid generating airborne dust.
- Ensure adequate ventilation.
- Wear appropriate personal protective equipment.

Environmental Precautions: Prevent the material from entering drains, rivers, lakes, and soil because zinc compounds may be harmful to aquatic organisms.

Cleanup Methods: Carefully sweep or vacuum the material while minimizing dust generation. Collect in suitable containers for reuse or disposal.

7. Handling and Storage

Handling

- Avoid breathing dust.
- Prevent unnecessary dust formation.
- Avoid contact with eyes.
- Maintain good industrial hygiene.

Storage

Store in tightly sealed containers in a cool, dry, well-ventilated location.

Protect from moisture, contamination, and incompatible chemicals.

8. Exposure Controls / Personal Protection

- **Engineering Controls:** Provide local exhaust ventilation where airborne dust may be generated.

Personal Protective Equipment

- **Respiratory Protection:** Approved particulate respirator where dust concentrations exceed occupational exposure limits.
- **Eye Protection:** Safety goggles or safety glasses.
- **Hand Protection:** Protective gloves.
- **Skin Protection:** Suitable protective clothing.

9. Physical and Chemical Properties

Appearance: White fine powder

Odor: Odorless

Physical State: Solid powder

pH: Approximately 7.0 (aqueous suspension)

Melting Point: Approximately 1,975°C

Boiling Point: Sublimes at elevated temperatures

Specific Gravity: Approximately 5.6

Bulk Density: Varies according to grade

Solubility: Insoluble in water; soluble in dilute acids and strong alkalis

Flash Point: Not applicable

Auto-Ignition Temperature: Not applicable

Explosive Properties: None

Oxidizing Properties: None

Vapor Pressure: Negligible

Vapor Density: Not applicable

10. Stability and Reactivity

Reactivity: Stable under recommended storage conditions.

Chemical Stability: Stable under normal conditions.

Conditions to Avoid: Excessive heat, Moisture, Contamination.

Incompatible Materials: Strong acids, strong alkalis, and strong reducing agents.

Hazardous Decomposition Products: Zinc oxide fumes may be produced at extremely high temperatures.

11. Toxicological Information

Acute Toxicity: Low acute toxicity under normal industrial use.

Skin Irritation: May cause mild irritation after prolonged exposure.

Eye Irritation: Dust may cause temporary mechanical irritation.

Respiratory Effects: Dust may irritate the respiratory tract.

Carcinogenicity: Not classified as carcinogenic.

Mutagenicity: No known mutagenic effects.

Reproductive Toxicity: No known reproductive hazards under normal industrial exposure.

12. Ecological Information

Ecotoxicity: Very toxic to aquatic organisms. Avoid uncontrolled environmental release.

Persistence and Degradability: Inorganic material; not biodegradable.

Bioaccumulative Potential: Limited bioaccumulation potential, although zinc ions may accumulate in aquatic organisms under certain conditions.

Mobility: Low mobility in soil; insoluble in water.

13. Disposal Considerations

Dispose of unused material and contaminated packaging according to applicable local, state, and national regulations.

Do not discharge into drains, surface water, or the environment.

14. Transport Information

Zinc Oxide Rubber Grade is **not generally regulated as dangerous goods for routine transport** under ADR/RID, IMDG, or IATA in many commercial packaging configurations. However, due to its classification as **hazardous to the aquatic environment**, large quantities should be transported carefully to prevent accidental release into the environment. Packages should remain tightly sealed, dry, and protected from physical damage throughout transportation.

UN Number: Not regulated for most commercial shipments.

UN Proper Shipping Name: Not regulated.

Transport Hazard Class: Not regulated.

Packing Group: Not applicable.

Environmental Hazard: Zinc compounds may be harmful to aquatic life. Avoid environmental release.

Marine Pollutant: Depending on shipment size and applicable transport regulations, environmental marking may be required. Verify current regulatory requirements before shipment.

Road Transport (ADR/RID): Transport in clean, dry, tightly sealed HDPE bags, fiber drums, jumbo bags, or approved industrial containers. Protect packages from rain, excessive humidity, contamination, and mechanical damage. Secure cargo properly to prevent movement during transportation.

Sea Transport (IMDG): The product should be transported in tightly sealed containers protected from seawater and moisture. Avoid any release into the marine environment during loading, unloading, or shipment. Follow applicable environmental transport requirements where necessary.

Air Transport (IATA): Transport in approved commercial packaging with containers securely sealed to prevent dust leakage. Protect packages from physical damage and moisture throughout air transport.

Special Transport Precautions:

- Keep containers tightly closed.
- Prevent dust generation during loading and unloading.
- Protect from moisture and direct sunlight.
- Avoid transporting together with strong acids or incompatible chemicals.
- Prevent accidental release into drains, rivers, lakes, or soil.
- Secure cargo properly to prevent package movement and damage.
- Inspect packaging before shipment to ensure integrity.

Transport in Bulk According to MARPOL Annex II and IBC Code: Not applicable.

Emergency Transport Information: In case of accidental spillage during transportation, isolate the affected area and avoid generating airborne dust. Carefully sweep or vacuum the material into suitable containers. Prevent entry into drains, waterways, and soil. Personnel involved in cleanup should wear suitable respiratory protection, safety goggles, gloves, and protective clothing. Dispose of collected material according to applicable environmental regulations.

15. Regulatory Information

- This product should be handled in accordance with applicable occupational safety, environmental protection, and industrial chemical regulations.
 - Users are responsible for complying with all local, national, and international regulations governing storage, transportation, handling, and disposal.
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16. Other Information

The information contained in this Material Safety Data Sheet is based on current scientific knowledge and industrial experience. It is intended to provide guidance for the safe handling, storage, transportation, and disposal of the product. It should not be interpreted as a warranty of product properties or suitability for any specific application. Users are responsible for ensuring compliance with all applicable regulations.

- **MSDS Generate Date:** 20-05-2017
- **Revision Date:** 30-12-2024
- **Website:** www.rawpharmabiz.com
- MSDS are based on the manufacturer's provided information.