

Material Safety Data Sheet (MSDS)

Product Name: Magnesium Oxide 99.5% Food Grade (BD 0.70-0.80 gm/ml)

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Supplier:

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1. Identification of the Substance/Preparation and Company

- **Product identifier:** Magnesium Oxide (MgO) — Food Grade, 99.5%
- **Other names / synonyms:** Magnesia, Calcined Magnesia, MgO Powder
- **Recommended use:** Food additive / food grade ingredient, antacid raw material, nutritional supplement ingredient, processing aid.
- **Restrictions on use:** Use only as recommended for food/technical applications. Not for direct human administration without appropriate formulation and regulatory approvals.

2. Hazard(s) identification

- **GHS classification:** Not classified as a GHS physical or health hazard in typical food grades at normal exposures.
- **Main hazards / overview:**
 - Dust may irritate eyes, skin, and respiratory tract.

- Repeated or prolonged exposure to high dust concentrations may cause mechanical irritation of mucous membranes and respiratory tract.
- **Signal word / symbols:** None required for the supplied food-grade powder in typical packaging.
- **Precautionary statements:** Avoid generating dust. Use appropriate personal protective equipment when handling dusty material. Wash hands after handling.

3. Composition / Information on ingredients

- **Substance:** Magnesium oxide (MgO)
- **Purity:** ≥ 99.5% (food grade)
- **Impurities / additives:** May contain trace levels of calcium, silica, or other naturally occurring minerals — see product certificate of analysis.
- **CAS number:** 1309-48-4

4. First-aid measures

- **Inhalation:** Move person to fresh air. If breathing is difficult or irritation persists, seek medical attention. If not breathing, give artificial respiration and seek immediate medical help.
- **Skin contact:** Remove contaminated clothing. Wash skin with soap and water. If irritation persists, seek medical attention.
- **Eye contact:** Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. If irritation persists, obtain medical attention.
- **Ingestion:** Rinse mouth with water. Do not induce vomiting unless directed by medical personnel. If large quantities are swallowed or if symptoms occur, seek medical attention.

5. Fire-fighting measures

- **Suitable extinguishing media:** Use extinguishing media appropriate for surrounding fire (water spray, foam, dry chemical, CO₂). MgO itself is non-combustible.
- **Unsuitable media:** None specific for MgO.

- **Specific hazards:** May act as inert filler in fires — no flammable decomposition products from MgO itself. Combustion products from packaging or other materials may produce hazardous fumes.
- **Protective equipment for firefighters:** Wear full protective clothing and self-contained breathing apparatus (SCBA) if fire involves packaging or other materials.

6. Accidental release measures

- **Personal precautions:** Avoid dust formation. Use suitable respiratory protection if dust is present. Avoid contact with eyes and skin. Evacuate non-essential personnel.
- **Environmental precautions:** Prevent large quantities from entering drains, sewers or waterways. MgO is not classified as an environmental toxin but may change pH in large quantities.
- **Methods for containment & cleanup:** Sweep or scoop up material and place in suitable, labeled containers for disposal or recovery. Avoid dry sweeping — use vacuum equipped with HEPA filter or dampen to reduce dust. Wash area after removal.

7. Handling and storage

- **Safe handling:** Avoid dust generation. Use local exhaust ventilation where dust may be generated. Do not eat, drink or smoke in handling areas. Wash hands after handling.
- **Storage conditions:** Store in a cool, dry, well-ventilated area. Keep containers tightly closed and protected from moisture. Use dust-tight containers.
- **Incompatible materials:** Avoid strong acids (MgO reacts with acids to form magnesium salts and heat) and strong oxidizing agents in bulk; store separately.

8. Exposure controls / Personal protection

- **Exposure limits:** No widely-adopted specific occupational exposure limit for food-grade MgO in all jurisdictions; where applicable, follow local workplace exposure limits for nuisance dust (e.g., respirable and inhalable dust TLVs). Use engineering controls to maintain dust below local limits.
- **Engineering controls:** Local exhaust ventilation at points of dust generation. Enclosed handling where practicable.
- **Personal protective equipment (PPE):**

- Respiratory protection: If dust levels exceed occupational exposure limits, use NIOSH/EN approved dust respirator (e.g., N95 or P2) or supplied air for high exposures.
- Eye/face protection: Safety goggles or face shield when dust generation is possible.
- Skin protection: Protective gloves and long sleeves if prolonged contact is likely.
- Hygiene: Good industrial hygiene practices; wash hands and exposed skin after work.

9. Physical and chemical properties

- **Appearance:** White to off-white powder
- **Odor:** Odorless
- **pH:** Slightly alkaline in aqueous suspension (typical)
- **Melting point / boiling point:** Decomposes/melts above typical temperatures for oxides (high melting point; not relevant for normal handling)
- **Flash point:** Not applicable (non-combustible)
- **Solubility:** Slightly soluble in water; reacts with acids to form salts.
- **Bulk density:** 0.70–0.80 g/mL (as supplied)
- **Particle size:** Product dependent—see certificate of analysis.

10. Stability and reactivity

- **Chemical stability:** Stable under normal ambient conditions.
- **Conditions to avoid:** Avoid generating dust; avoid contact with strong acids (reaction produces heat and magnesium salts).
- **Materials to avoid:** Strong acids, strong oxidizing agents (contact with acids should be controlled).
- **Hazardous decomposition products:** Under normal use none; at extreme temperatures decomposition not expected to produce hazardous organic products (inert inorganic oxide).

11. Toxicological information

- **Acute toxicity:** Low acute toxicity by oral route at levels likely encountered in handling; food-grade MgO is used as a food additive in controlled amounts.
- **Irritation:** Dust may cause mechanical irritation to eyes, skin and respiratory tract.
- **Sensitization:** Not known to be a sensitizer.
- **Chronic effects:** Prolonged inhalation of large amounts of nuisance dust may cause respiratory irritation. No specific chronic systemic toxicity expected from correctly used food grade MgO.
- **Toxicological data / notes:** For accurate risk assessment consult authoritative toxicology sources and regulatory documents. Use product certificate and any batch testing for further toxicological details.

12. Ecological information

- **Ecotoxicity:** Not expected to be bioaccumulative or acutely toxic to aquatic organisms in normal quantities; however, large discharges can alter water pH and harm aquatic life.
- **Persistence and degradability:** Inorganic; does not biodegrade.
- **Mobility:** Insoluble to slightly soluble depending on pH; may settle in sediments.
- **Environmental precautions:** Prevent large spills to waterways; adhere to local environmental regulations for disposal and release.

13. Disposal considerations

- **Waste treatment methods:** Dispose of in accordance with local, regional and national regulations. Small quantities may be disposed of as inert solid waste; large quantities should be evaluated for solid waste disposal facility acceptance. Avoid release to waterways or sewer systems.
- **Contaminated packaging:** Empty containers may retain product residues; handle as per local regulations. Clean containers before recycling or disposal.

14. Transport information — DETAILED

This section provides comprehensive guidance for safe transport of Magnesium Oxide (food grade). Regulatory classification may vary by jurisdiction; always verify

with current local/national/international regulations and carrier requirements prior to transport.

General statement: Magnesium oxide (MgO) food-grade powder is **generally not classified as a dangerous good for transport** under major transport regulations when shipped as a dry, non-reactive powder in normal packaging (no UN number typically assigned). However, regulatory status can vary by jurisdiction and by the presence of contaminants or if shipped in bulk. The information below is guidance — confirm with the competent authority, carrier, and applicable regulations (ADR, IMDG, IATA, CIM/OTIF, DOT, etc.) before shipment.

Road / Rail (ADR / RID / national):

- **Classification:** Not regulated / Not classified as hazardous for transport in typical packaged form (check local ADR/RID lists).
- **UN Number:** Not applicable for non-regulated shipments (no UN number ordinarily assigned).
- **Proper Shipping Name:** Magnesium oxide — when non-regulated, ship as "Not classified" or by product name; where required, use technical name.
- **Transport hazard class:** Not applicable / Not regulated.
- **Packing group:** Not applicable.
- **Special provisions:** Avoid creating dust; ensure packaging is secure and labeled with product name and handling instructions. Use moisture-resistant packaging to prevent clumping.

Sea (IMDG):

- **Classification:** Typically **not classified** as dangerous goods for sea transport when shipped as a packaged powder.
- **IMDG UN number / class / PG:** Not assigned for normal shipments. If classified by a competent authority in a particular case (rare), follow IMDG code instructions.
- **Marine pollutant: No** — MgO is not considered a marine pollutant. However, avoid large releases to marine environment.

Air (IATA / ICAO):

- **Classification:** Typically **not regulated** as dangerous goods by IATA when shipped as packaged, non-hazardous powder.

- **IATA packing instructions:** Not applicable for non-regulated shipments. Carriers may impose restrictions on powders — check airline policy (some airlines restrict powders in passenger or cargo aircraft).
- **Special precautions for air transport:** Package to prevent dust release; comply with air carrier rules for powdered materials; check whether shipment will be carried in passenger vs. cargo aircraft (passenger carriage may have more restrictions).

Bulk shipments:

- For bulk (bulk bags / loose in container / tanker) check national bulk transport regulations. Large quantities may be subject to additional requirements for spillage prevention and containment during transport. Ensure proper documentation and handling instructions.

Packaging and labeling recommendations:

- Use clean, dry, strong, moisture-resistant sacks (multi-wall paper sacks with inner polyethylene liner, kraft sacks, or lined FIBCs) or sealed drums.
- Secure packaging to prevent rupture and dust formation.
- Label with: Product name, “Magnesium Oxide (MgO) — Food Grade”, net weight, batch/lot number, handling instruction “Avoid dust formation — use local exhaust ventilation”, manufacturer contact and emergency telephone.

Segregation / stowage:

- Stow in clean, dry area; protect from moisture.
- Segregate from strong acids and incompatible materials. No special segregation required with most non-hazardous goods.

Emergency response / transport incident procedures:

- In case of spillage during transport: prevent dust formation, avoid discharge to drains and waterways, contain and recover spilled material where possible (sweep/vacuum/dampen). Use appropriate PPE (dust respirator, goggles, gloves). Notify local emergency services if environmental release occurs.
- Provide the shipper/consignor and carrier emergency contact. For this product contact RawPharmaBiz at +91 97272 88479 or email info@rawpharmabiz.com for product information and assistance.

Regulatory note: Always verify the transport classification with the relevant competent authority and current editions of ADR, IMDG, IATA DGR, and national dangerous goods regulations before shipping. If the product is shipped mixed with other substances (e.g., acid), or if it contains contaminants, classification may change.

15. Regulatory information

- **Regulatory status (general):** Food grade MgO is typically permitted for use as a food additive or nutrient within jurisdictional limits — consult local food regulations for permitted uses and maximum levels (e.g., food additive lists, national food codes).
- **Labeling:** Comply with local food safety and chemical safety labeling requirements.
- **Relevant legislation:** Users should consult national workplace safety legislation, environmental protection laws, and food safety regulations applicable in the country of use.

16. Other information

- **Disclaimer:** The information in this MSDS is believed to be correct as of the revision date and is provided in good faith. It is intended to describe the product for health, safety and environmental purposes and is not a guarantee of product properties. Recipients must satisfy themselves as to the suitability and completeness of this information for their own use.
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