



TECHNICAL DATA SHEET

Chemical Name: Magnesium Oxide

Synonyms: Magnesia; Calcined Magnesia

Molecular Formula: MgO

Molecular Weight: 40.30

CAS No.: 1309-48-4

E Number: E530

EINECS No.: 215-171-9

Product descriptions

Magnesium Oxide (Food Grade) is a white, odorless, and tasteless powder or granular with high purity and excellent reactivity. It is produced from selected magnesium sources under controlled calcination and purification processes. Food Grade MgO complies with international food additive standards and is widely used as a nutrient source, pH regulator, and anti-caking agent.

Typical specifications

Parameter		Specification
Assay (ignition basis)	%	98-100.5
Calcium	≤%	1.1
Chloride	≤%	0.1
Acid insoluble matter	≤%	0.1
Iron	≤ppm	20
Lead	≤ppm	1
Arsenic	≤ppm	0.5
Mercury	≤ppm	0.1
Cadmium	≤ppm	0.5
Loss on ignition	≤%	3.5

Manufacturing Method

Magnesium Oxide (Food Grade) is produced by calcining high-purity natural magnesite ($MgCO_3$) or precipitated magnesium hydroxide at moderate temperatures. The process ensures high reactivity and purity while maintaining compliance with food safety standards (FCC, EU Regulation (EC) No. 231/2012).

Raw Materials

- Natural Magnesite ($MgCO_3$)

- Magnesium Hydroxide ($Mg(OH)_2$)

Both raw materials are derived from high-purity, low-impurity sources suitable for food applications.

Working Principle

Magnesium Oxide acts as a source of magnesium, which is an essential mineral for human nutrition. It also serves as an alkaline compound that neutralizes acids, stabilizes pH, and prevents caking in powdered foods. Its high surface area and low solubility make it effective in controlled release of magnesium in the digestive system.

Applications

- Food & Beverage Industry: As a magnesium supplement, anti-caking agent, and acidity regulator.
- Dietary Supplements: Used as a magnesium source in tablets, capsules, and powders.
- Bakery & Dairy Products: Improves texture and stability.
- Fortified Foods: Enrichment of nutritional content.
- Health Products: Supports muscle, nerve, and bone health.

Certifications

- ISO 9001
- ISO 14001
- ISO 22000
- KOSHER
- HALAL
- GMP VERIFICATION

Packaging

- 25kg PP/PE bags
- 50kg woven bags
- 1000kg jumbo bags
- Custom packaging available upon request

Storage & handling

- Store in a dry, well-ventilated warehouse
- Avoid moisture, direct sunlight, and strong oxidizers
- Keep packaging sealed to avoid caking and degradation
- Shelf life: 2 years under proper storage

Safety & transport

- Non-flammable, non-toxic

- Transport as general chemicals
- UN No.: Not classified as dangerous goods
- Follow local environmental and chemical handling regulations