MgO for Magnesium Fluoride

Chemical Synthesis · **CAS 1309-48-4** · **Grade M411**

1. PRODUCT DESCRIPTION

Synthesized for reaction with hydrofluoric acid (HF) to produce magnesium fluoride (MgF_2)—a key material in anti-reflective coatings for precision optics (camera lenses, lithography steppers). This grade's ultra-low transition metal content (Fe, Ni, Co, Cr <50 ppm total) ensures the resulting MgF_2 exhibits minimal optical absorption in UV-IR spectrum (193-7000 nm), critical for laser optics. Controlled particle size (D50 5-10µm) ensures rapid, complete HF reaction while producing MgF_2 crystals with uniform refractive index (n=1.38 at 587.6 nm). The low LOI (≤2.0%) indicates minimal carbonate/hydroxide contamination, preventing bubble formation during thin-film deposition.

2. TYPICAL PROPERTIES

PROPERTY	TYPICAL VALUE
MgO Content	≥ 99.5%
Transition Metal Ions	Trace
Loss on Ignition	≤ 2.0%

Typical values, not a purchase specification. A batch-specific Certificate of Analysis is issued for every shipment. Confirm acceptance limits for your application with us before ordering.

3. MATERIAL CONSTANTS

PROPERTY	VALUE	SOURCE
True density	3.58 g/cm³	Literature value
Melting point	2,852 °C	Literature value
Mohs hardness	5.5	Literature value
Refractive index	1.736	Literature value

4. TYPICAL APPLICATIONS AND KEY PROPERTIES

- Ultra-low Transition Metals (<50 ppm total Fe/Ni/Co/Cr)
- High Purity (≥99.5% MgO) for optical transparency
- Controlled Particle Size (D50 5-10µm) for uniform MgF_2 crystals
- Low LOI (≤2.0%) prevents gas evolution during coating

5. HANDLING NOTES

- **Dispersion.** Dry-blend or side-feed depending on loading; avoid moisture pickup before compounding.
- **Storage.** MgO is hygroscopic — reseal opened bags and use within the recommended period.
- **Dosage.** Confirm the addition level against your compound formulation; over-dosage can scorch or affect cure.
- **Safety.** Dust mask and eye protection when handling powder. See the SDS for full information.

6. PACKAGING AND STORAGE

ITEM	DETAIL
Packaging	25 kg PP woven bag with PE liner; larger packaging on request
Storage	Cool, dry, sealed — keep away from acids and moisture
Shelf life	24 months in unopened original packaging
Loading port	Tianjin (Xingang) / Qingdao

7. REGULATORY STATUS

ITEM	STATUS
REACH SVHC	Base material screened — no SVHC above 0.1 % w/w (SGS SHAEC2008188708). Treated grades can be tested on request.
RoHS (EU) 2015/863	Base material compliant (SGS NGBEC25004227002 / CZXEC1900477942). Treated grades on request.
Quality system	ISO 9001:2015 — certificate 21726Q00302R001, valid to 2029-04-15