MgO for Tires

Rubber Industry · **CAS 1309-48-4** · **Grade M411**

1. PRODUCT DESCRIPTION

Developed in collaboration with leading tire manufacturers, this specialized grade balances activity (30-50 m^2/g surface area) with processability. In tire sidewall compounds (typically NR/BR or EPDM blends), it serves as a co-activator with zinc oxide, accelerating sulfur cross-linking and reducing cure time from 40 minutes to 25-30 minutes at 160°C. The optimized particle size distribution (95%+ through 325 mesh) ensures rapid dispersion during mixing, eliminating 'fish-eyes' (undispersed particles) that cause weak spots. Post-cure, it enhances the rubber's thermal stability—maintaining elasticity at 150°C service temperatures—critical for high-speed driving where sidewalls undergo flexing cycles exceeding 100,000/day.

2. TYPICAL PROPERTIES

PROPERTY	TYPICAL VALUE
MgO Content	≥ 94.0%
Surface Area	30-50 m²/g
Residue on Sieve	≤ 0.01%
Moisture	≤ 0.5%

> **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

- Accelerates Cure 20-30% (reduces energy consumption per tire)
- Boosts Tensile Strength 15-25% (improves load-carrying capacity)
- Heat Resistance to 150°C (prevents sidewall cracking in summer)
- Ultra-low Moisture (<0.5%) prevents pre-cure during storage

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