Mg(OH)2 for PVC Cables

Cable Industry · **CAS 1309-42-8** · **Grade HD-9021 / HD-0822 / H36-7**

1. PRODUCT DESCRIPTION

Formulated as a synergistic additive in PVC cable compounds (typically 5-15 phr), this grade performs dual functions: (1) During processing at 160-180°C, it acts as a secondary heat stabilizer, chelating HCl released from dehydrochlorination and extending static heat stability time from 20 min to 30+ min (Congo Red test); (2) During fire exposure, it undergoes endothermic decomposition, releasing water vapor that dilutes HCl concentration in smoke from 400-600 ppm to <200 ppm—critical for meeting railway fire safety standards (EN 45545-2 HL2). The resulting MgO char layer improves LOI (Limiting Oxygen Index) from 28% to 32-35%, enhancing flame resistance.

2. TYPICAL PROPERTIES

Columns: **HD-9021 · HD-0822 · H36-7** — values are per grade.

PROPERTY	TYPICAL VALUE
Base	`Synthetic / Synthetic / Natural brucite`
Process	`Precipitated, ground, surface-treated / Precipitated, ground, surface-treated / Ore ground`
MDH content, % min	`99 / 99 / –`
MgO content, % min	`– / – / 60`
CaO, % max	`0.1 / 0.1 / 3`
SiO_2, % max	`0.1 / 0.1 / 7`
Fe_2O_3, % max	`0.005 / 0.005 / 2.0`
Moisture, % max	`0.5 / 0.5 / 2.0`
Loss on ignition, %	`≈30.0`
Whiteness (R457), min	`96 / 96 / 88`
Particle size D50, μm	`1–2 / 1–2 / 3–3.8`
Decomposition, °C	`340–450`
Max service temperature, °C	`300`
Distinguishing feature	`Water resistance, high strength / Dispersion, high elongation at break / Natural mineral, cost-efficient`

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	`2.36 g/cm³`	Literature value
Decomposition onset	`330–340 °C`	TGA (ISO 11358)
Heat absorption	`≈ 1,450 J/g`	DSC (ISO 11357)
Water released	`≈ 31 wt%`	From LOI

4. TYPICAL APPLICATIONS AND KEY PROPERTIES

- 90%+ HCl Neutralization (reduces toxic smoke in fires)
- Heat Stability Extension +50% (30+ min vs 20 min Congo Red)
- Smoke Density Reduction 30-40% (clearer evacuation routes)
- Cost-effective Synergist (5-15 phr loading vs 50-60 phr standalone)

5. HANDLING NOTES

- **Drying.** Dry to ≤ 0.2 % before processing; ≤ 0.15 % for film grades. 105 °C for 2–4 h, do not exceed 150 °C.
- **Loading.** Flame-retardant performance is reached at high loading (typically 55–65 wt% in EVA/PE); confirm with your own compound trials.
- **Temperature.** Keep the melt below 200 °C — decomposition begins above 300 °C.
- **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