Modified Mg(OH)2 for LSZH Cables

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

1. PRODUCT DESCRIPTION

Meeting IEC 60754-1/2 (halogen-free) and IEC 61034 (smoke density) standards, this ultra-fine grade is engineered for mission-critical LSZH cable applications—subways, tunnels, data centers, and ships—where toxic smoke poses evacuation risks. Particle fineness (D50 1.2µm) enables 65-70 wt% loading in EVA/EMA copolymers without compromising flexibility (Shore A <90). Hydrophobic surface treatment (contact angle >100°) prevents moisture absorption, maintaining volume resistivity >10^{14} Ω·cm even in 95% RH environments. Ultra-low soluble sodium (<100 ppm) prevents electrical conductivity degradation and water treeing under 50/60 Hz AC voltage stress.

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

- Smoke Density <50 (IEC 61034: >60% light transmission)
- Halogen Acid <0.5% (IEC 60754-1: zero corrosive gas release)
- Ultra-fine D50 1.2µm (enables 65-70 wt% loading in flexible cables)
- Water Treeing Resistance (72h @ 12 kV with <5% degradation)

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