Mg(OH)2 for EVA Photovoltaic Films

Solar Energy · **CAS 1309-42-8** · **Grade HD-9**

1. PRODUCT DESCRIPTION

Developed for crystalline silicon solar modules, this ultra-pure, nano-grade $Mg(OH)_2$ addresses the critical challenge of flame retardancy without sacrificing power output. Iron content is suppressed below 10 ppm (vs 50-100 ppm in industrial grades) to prevent UV-catalyzed EVA yellowing that would reduce module efficiency by 2-5% over 25 years. Nano-scale particle size (D50 <200 nm) ensures Rayleigh scattering is minimized, maintaining >90% transmittance in the 400-1100 nm spectrum. Hydrophobic surface treatment (water absorption <0.1%) prevents moisture ingress that causes potential-induced degradation (PID), where sodium ion migration creates shunt paths reducing output by 10-30%.

2. TYPICAL PROPERTIES

PROPERTY	TYPICAL VALUE
Mg(OH)2 Content	≥ 99.9%
Fe	≤ 10 ppm
Transmittance Impact	Minimal
D50	Nanometer grade

> **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

- Ultra-low Iron (<10 ppm Fe) prevents EVA yellowing over 25 years
- High Transparency (>90% transmittance 400-1100 nm)
- Anti-PID Surface (water absorption <0.1%, blocks Na^+ migration)
- Nano-scale Particles (D50 <200 nm) for minimal light scattering

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