Hexagonal Modified Magnesium Hydroxide HC515SA

Flame Retardants · **CAS 1309-42-8** · **Grade HC515**

1. PRODUCT DESCRIPTION

HC515SA is a chemically synthesized, surface-modified hexagonal magnesium hydroxide powder developed for high-loading halogen-free flame-retardant polymer systems. The plate-like hexagonal crystal morphology increases contact area with resin, while surface treatment improves wetting and dispersion in PE, PP, POE, EPDM, EVA, XLPE, PVC, TPU, PA, ABS and LSZH cable compounds. Compared with conventional untreated magnesium hydroxide, HC515SA is designed to support lower compounding torque, smoother extrusion, better melt flow and stronger mechanical-property retention at high filler loading. During fire exposure, Mg(OH)2 decomposes endothermically and releases water vapor, cooling the polymer and diluting combustible gases without generating corrosive halogen acid smoke. With 99.8% Mg(OH)2, D50 1.3 um, low iron, low chloride, low moisture and whiteness 99, this grade is suited for color-sens

2. TYPICAL PROPERTIES

PROPERTY	TYPICAL VALUE
Product Grade	HC515SA
Reference Standard	HG/T3607-2007
Chemical Name	Modified magnesium hydroxide / Mg(OH)2
CAS No.	1309-42-8
Appearance	White powder
Mg(OH)2 Content	≥ 99.8%
CaO	≤ 0.01%
Acid Insoluble Matter	≤ 0.016%
Moisture	≤ 0.10%
Chloride (as Cl)	≤ 0.05%
Iron (Fe)	≤ 0.002%
Particle Size D10	≤ 0.622 µm
Particle Size D50	≤ 1.3 µm
Particle Size D100	≤ 7.742 µm
Whiteness	≥ 99
Bulk Density (TDS)	0.25 g/ml
BET Surface Area (TDS)	6 m²/g
Recommended Processing Temperature	< 300°C
Typical Packaging	25 kg bag / jumbo bag
Target Applications	PE, PP, EVA, XLPE, PVC, TPU, LSZH cable compounds

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

- Hexagonal plate morphology improves polymer interface contact, dispersion and melt flow
- Surface-modified MDH supports high filler loading with lower compounding torque and smoother extrusion
- 99.8% Mg(OH)2 purity and whiteness 99 for white or light-color flame-retardant compounds
- Controlled particle distribution with D10 0.622 um, D50 1.3 um and D100 7.742 um
- Low Fe 0.002%, low chloride 0.05% and low moisture 0.10% help protect color and electrical stability
- Halogen-free smoke suppression for PE, PP, EVA, XLPE, PVC, TPU, PA, ABS and LSZH cable systems

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