

Innovation in Environmentally Friendly Flame Retardants



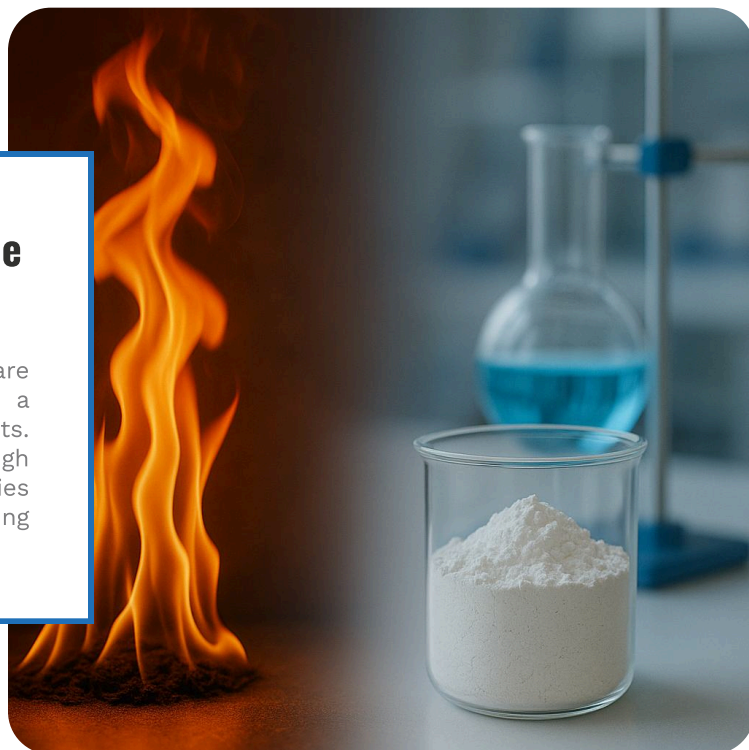
Company Overview

Founded in 1964, Química del Rey, S.A. de C.V. is a Mexican chemical company with a long-standing reputation for quality and innovation. As part of the Industrias Peñoles mining and metallurgical group, we operate in Laguna del Rey, Coahuila, Mexico.

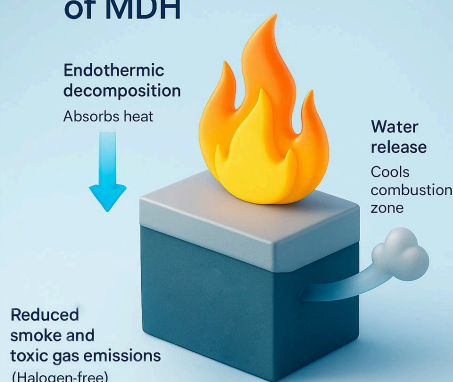
Our production is based on natural brines extracted through hydraulic mining and dolomite, which are processed to produce synthetic, high-purity magnesium hydroxide (MDH). We are certified under ISO 9001:2015 and ISO 14001:2015.

Hidromag: Magnesium Hydroxide Flame Retardants

In today's market, where safety and sustainability are essential, magnesium hydroxide (MDH) stands out as a superior alternative to traditional flame retardants. **Hidromag**, our halogen-free MDH products offer high thermal efficiency, making them ideal for industries seeking reliable fire protection without compromising environmental standards or processing performance.



Action Mechanism of MDH



Action Mechanism

MDH acts as a flame retardant through a physical-chemical mechanism:

- Endothermic decomposition that absorbs heat.
- Water release, which cools the combustion zone.
- Formation of a protective char layer of magnesium oxide (MgO), acting as a thermal and physical barrier.
- Low smoke and toxic gas emissions, thanks to its halogen-free nature.

Hidromag Advantages

Compared to Aluminum Trihydrate (ATH)

- ✓ Higher thermal stability (~330°C), ideal for demanding polymer processing.
- ✓ Superior smoke suppression through char formation.
- ✓ Broader polymer compatibility, including thermoplastics and elastomers.

Compared to Halogenated Flame Retardants

- ✓ Non-toxic and non-corrosive, no harmful gases released during combustion.
- ✓ Environmentally compliant, suitable for global safety regulations.
- ✓ Multifunctional protection: flame retardancy, smoke suppression, and physical barrier.

Typical Properties of Hidromag MDH

Parameter	Units	Typical Value
Mg(OH)₂	%	>99
Moisture	%	<0.3
Density	g/cm³	2.36
Bulk Density	kg/m³	>320.0
Electrical Conductivity	μS/cm	<300.0
Mohs Hardness	--	2.5

Wire and Cable Compounds

Hidromag Ly and *Hidromag Lq* are the preferred flame retardant for wire and cable applications. In thermoplastic compounds, it enhances fire resistance, electrical performance, mechanical strength, and color stability. Surface-treated grades, *Hidromag Ly SV*, improve dispersion uniformity and support high throughput rates, making them ideal for high-performance insulation and jacketing.



Fiberglass Reinforced Panels (FRP)

In fiberglass-reinforced panels, *Hidromag RP* provides thermal stability, flame retardancy, improved mechanical properties and optimal processing behavior. Widely used in architectural and industrial composites, *Hidromag RP* contributes to fire safety, durability, and regulatory compliance.

Applications

Product Grades:

Hidromag Ly, *Hidromag Ly SV*, *Hidromag Lq*

Product Grade	Mean Particle Size D50 (µm)	Surface Area (m ² /g)	Description
Ly0	0.6 - 0.9	11	Standard MDH
Ly1	1.3 - 1.7	10	
Ly2	2.0 - 2.4	9	
Ly0 SV	0.6 - 0.9	11	Silane Coated MDH
Ly1 SV	1.3 - 1.7	10	
Ly2 SV	2.0 - 2.4	9	
Lq0	0.6 - 0.9	11	New Generation MDH
Lq1	1.3 - 1.7	9	

Product Grades:

Hidromag RP

Product Grade	Mean Particle Size D50 (µm)	Surface Area (m ² /g)	Description
Hidromag RP	2.0 - 2.4	9	Fatty Acid Coated MDH Grade



Hidromag

Halogen-Free Flame
Retardant Solutions

Roofing Membranes

Hidromag HQ3005 is widely used in TPO roofing membranes for its excellent flame retardant properties, high level dispersion and improved rheological and mechanical properties. While its natural polarity may limit compatibility with low-polarity elastomers, surface-treated Hidromag HQ3005 overcomes this challenge, enabling seamless integration. These formulations offer aging resistance, processability, and cost efficiency, making Hidromag HQ3005 a top choice for sustainable roofing systems.

Applications

Product Grades: Hidromag RP

Product Grade	Mean Particle Size D50 (µm)	Surface Area (m ² /g)	Description
Hidromag HQ3005	4.0-5.0	5.5-9.0	Fatty Acid Coated MDH Grade



Technical Support & Tailor-Made Solutions

At Química del Rey, we go beyond supplying high-quality flame retardants. We offer technical support and tailor-made solutions that meet specific processing and performance needs. Our team is ready to collaborate with you in developing customized formulations, optimizing compound performance, and meeting your specific requirements. For more information about our products or tailor-made solutions, feel free to contact us.

For inquiries, technical support, or to discuss customized solutions, please contact us:



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