



MagShield® S Magnesium Hydroxide Powder in Polypropylene

To achieve a UL94 V(0) rating at 1/8" (3.2 mm) in polypropylene, a loading of 60% MagShield® S NB 10 Magnesium Hydroxide by weight of the total compound is usually required. MagShield S NB 10 is coated with stearic acid using a proprietary process to improve dispersion and to reduce mixing requirements.

Processing Guidelines

Compounding trials in polypropylene (PP) homopolymer with a melt flow index of 22 at 230°C were conducted using a 40 mm Leistritz twin screw extruder. To obtain the whitest extrudate strands with the least porosity, the following guidelines are recommended:

- Processing temperature between 200°C and 225°C.
- Operating the extruder at low shear rate. The Leistritz extruder, which has a maximum rpm of 400, was operated at 150 rpm.
- Proper venting, preferably vacuum venting of at least 900 millibars near the die, is needed.

Formulation and Results

Formulation	UL94 Data at 1/8" (3.2 mm)	
37.5% Polypropylene (22 MFI)	UL94 Rating at 1/8" (3.2 mm)	V(0)
60% MagShield® S NB 10	Total Afterflame Time (5 samples)	20 seconds
1.5% Calcium Stearate	Total Afterflame + Afterglow (5 samples)	20 seconds No Afterglow
1.0% PolyAd Preblend MM1252-25	Afterflame on any sample to holding clamp	No
	Ignited Cotton	No

Stabilization and Processing Aids

Addition of stabilizers such as PolyAd Preblend MM1252-25 from Ciba Specialty Chemicals Corporation is helpful in providing good color in the extrudate. Other multi-component stabilizer packages may be used. Titanium dioxide (TiO₂) may be added for additional whiteness/brightness.

Additional stearate processing aid can be added up to 1.0% to reduce extruder torque. In these trials, 1.0% calcium stearate was used.

See MagShield® technical data sheets for complete descriptions of our products. If you would like to speak with a technical representative, please call **800-648-7400** (inside the U.S.) or +1-410-780-5500.

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