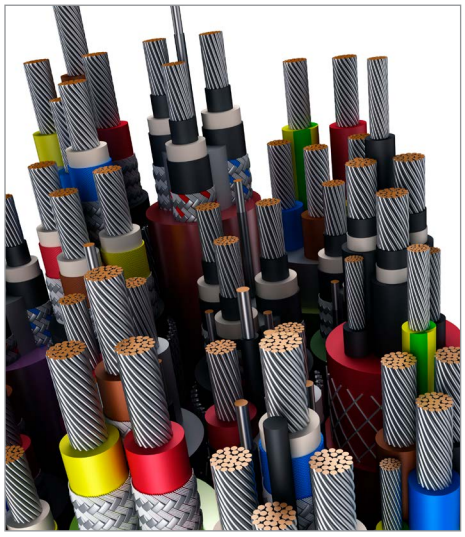
MULTIBASE™ Solutions for HFFR Wire and Cable Formulations

Industry needs

The wire and cable market is highly diversified by application and technical requirements. Compounders also must design innovative and differentiated solutions while addressing evolving trends and regulations including digitalization, electrification, sustainability, and safety. MULTIBASE™ HFFR additives provide answers to all of these challenges.



DuPont™ MULTIBASE™ solutions enable our customers to design best-in-class wire and cable compounds to respond to these demanding industry performance requirements.

MULTIBASE™ solutions for halogen-free flame retardant (HFFR) formulations

MULTIBASE™ thermoplastic additives are silicone masterbatches that allow optimized rheological conditions to enable a smooth extrusion process in highly-filled polyolefin -based HFFR compound formulations (containing high loadings of ATH/MDH, >60%).

These high FR filler loading can lead to rheological issues during cable extrusion, such as low output, melt fracture, and rough cable surface. Adding MULTIBASE™ silicone masterbatches in polyolefin HFFR compounds helps re-establish stable rheological conditions and resolves process issues.

Key benefits of MULTIBASE™ silicone additives in polyolefin HFFR compounds:

During Cable Extrusion Process

- Optimized rheological conditions
- Higher throughput
- Lower energy consumption, reduced torque
- Reduced torque
- Die pressure reduction

On the Cable

- Smooth cable surface (reduced melt fracture)
- Better cable performance due to good filler dispersion
- Low order of toxicity (no toxic fumes while burning)
- Permanent low coefficient of friction

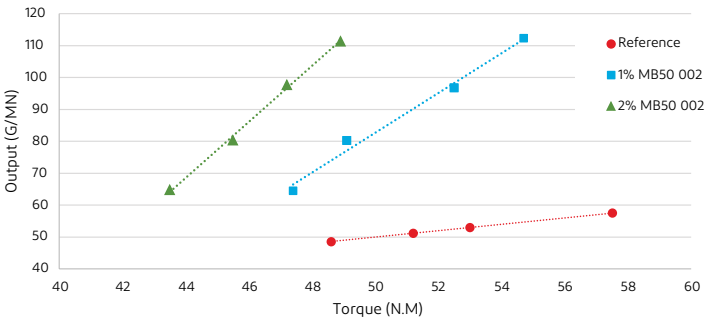
HFFR Compound Type	MULTIBASE™ Solution
PE-based	MB50-002, MB25-502
PP-based	MB50-001
EVA-based	MB50-320

Source: DuPont

MULTIBASE™ for Wire & Cable HFFR Compounds

Rheological behavior of compounds containing MULTIBASE™ additives during cable extrusion

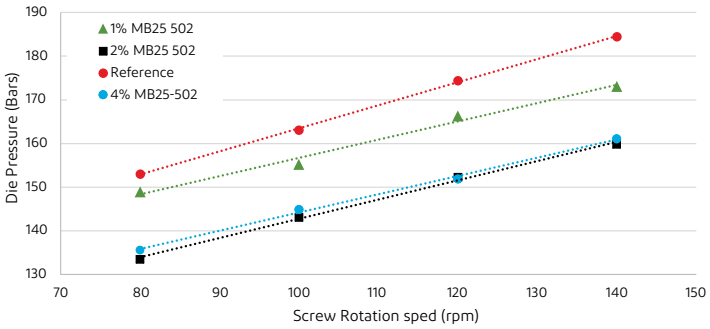
Torque (N.M.) vs Output (G/min) as a function of MB50 002 loading*



Source: DuPont

MULTIBASE™ MB50 002 reduces torque at given throughput while improving surface aspect (reducing shark skin).

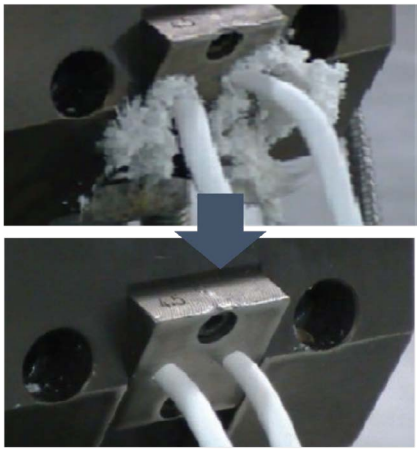
Rotation Speed (RPM) vs Die Pressure (bars) as a function of MB25 502 loading*



Source: DuPont

MULTIBASE™ MB25 502 reduces die pressure.

*These are typical properties only and are not to be construed as specifications. Customer must make their own data assessment.



The top image shows extrusion without MB50 002. Bottom image shows extrusion after MB50 002 added.

Extend Properties, Enhance Processing, Reinforce Materials.

Combining an industry-leading portfolio of silicone-based additives and masterbatches with deep experience in serving the industries that use them, we can help you capture greater production efficiencies while delivering more performance, durability and quality to your end-users.

To learn more about our wide range of plastics, visit **www.dupont.com/multibase** and contact us if you have any questions.

DuPont.com

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