





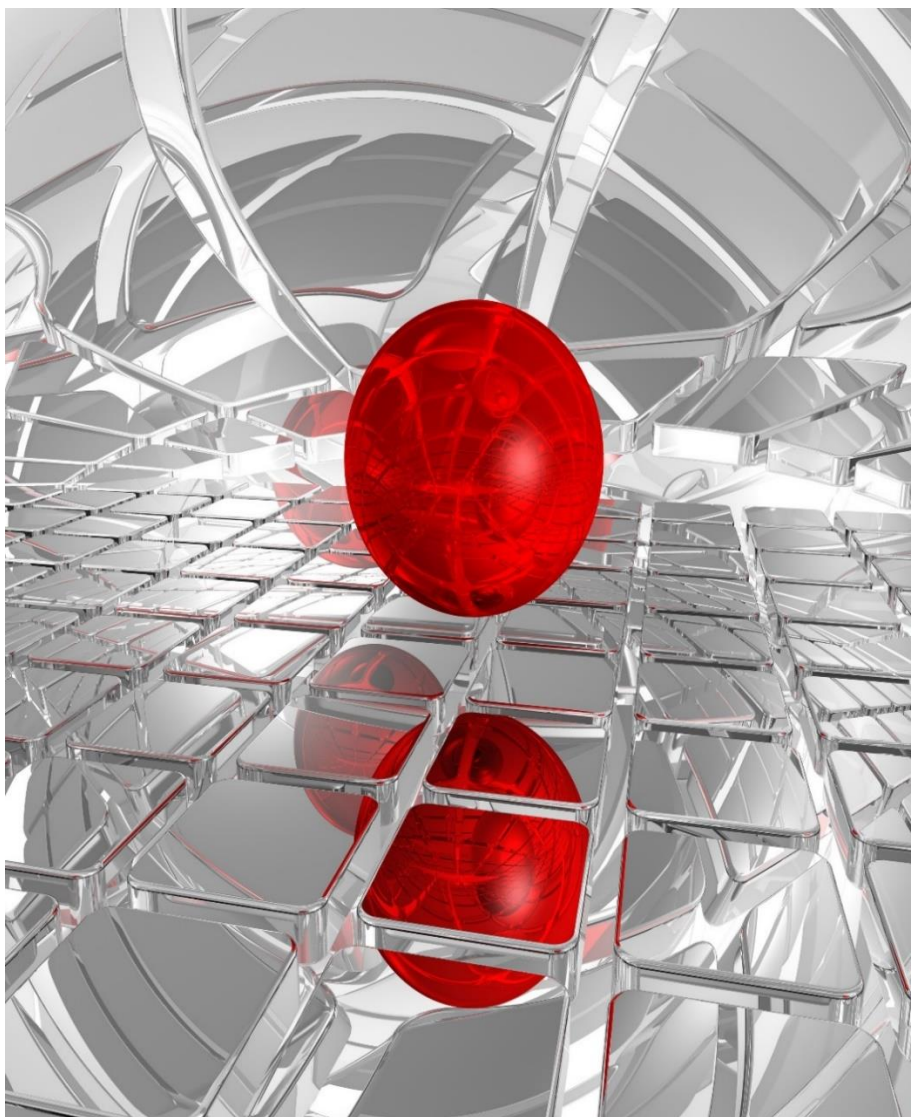




Company Business Units

-  FUNCTIONAL MODIFIERS & POWDERS
-  POLYMER ALLOYS
-  CROSSLINKING SOLUTIONS
-  SYNTHESIS
-  POROUS
-  R&D



Products Pipeline 2019

BLOCK-COPOLYMERS

Masterbatches are solid or liquid additives for plastic, used for imparting other properties to plastics. They are concentrated mixtures, which are added to base materials in processing. For good mixing during processing, masterbatch is composed from the desired additive and the host resin. Concentration of the additive in masterbatches is much higher than in the end product, so only a small amount of masterbatch is used during processing.

Advantages of Our Proprietary Technologies



- ❖ **LOW** CONTENT OF **UNREACTED MONOMERS**
("CLEAN POLYMERIZATION")
- ❖ **LOW** CONTENT OF **VOC** (VOLATILE ORGANIC
COMPOUNDS)
- ❖ PRODUCT **CUSTOMIZATION** CAN BE PROVIDED

GRAFTALEN™

MB-HMSPP 00100
(mfi-1)

MB-HMSPP 01200
(mfi-12)



HMSPP - (high melt strength polypropylene) is a concentrate that needs to be added to any standard PP type in the extruding process characterized by a small content of long-chain branches and high polydispersity;

Due to its inherent nature, polypropylene lacks melt strength. HMSPP contains long chain branches and consequently exhibits significantly high melt strength.

HMSPP grades offer unique balance of process-ability and high melt elasticity

The increase of the molecular weight causes the decrease of the index of fluidity. The ramification formation of long chain doesn't alter the fluidity index and also improves the extensibility.

GRAFTALEN™ MB-HMSPP is a masterbatch of long chain branched (LCB).

It's mainly designed to increase melt strength of polypropylene for easier processing

Applications

- used to make polypropylene processing easier, by increasing melt strength and stability at lower shear stresses.
- Sheet extrusion thermoforming, blow molding, extrusion coating, fiber/film extrusion, injection moulding...
- Foaming applicationsSpecial

Processing

- GRAFTALEN™ MB-HMSPP 01200 is processable on most thermoplastics processing equipment



Thermoforming and general extrusion

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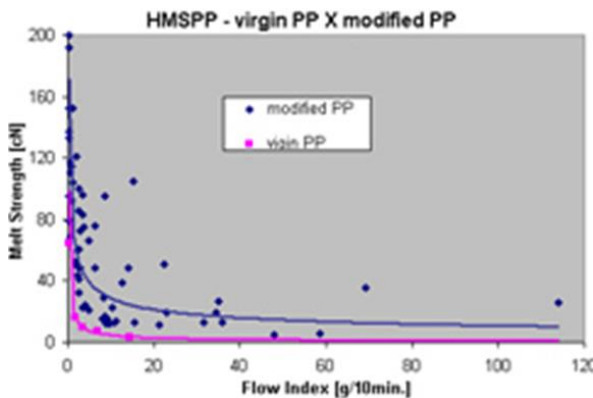
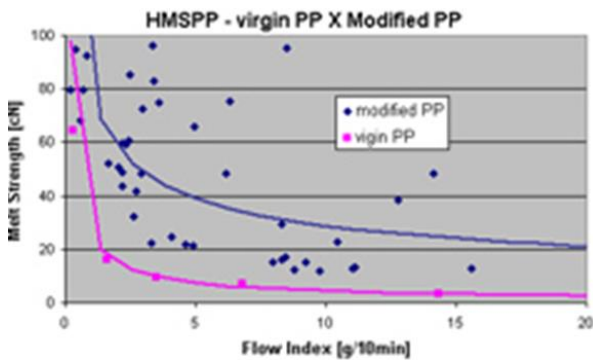
MB-HMSPP 00100
(mfi-1)

MB-HMSPP 01200
(mfi-12)

- Reduced “ Sag” of the plate or the warm film.
- Wide Window processing.
- Fast processing cycles
- Final product with regular thickness distribution

Direct coatings extrusion

- Avoid the lamination process
- Promote the coating thickness reduction
- Reduce costs by process simplification
- coating speeds from 2 to 3 larger times with a formation of neck very smaller, about 4 to 7 times lesser, without occurrence of the wiredrawing resonance. Coating thickness of up to 5 µm can be obtained easily. Processing speeds of 300m/min were reached with softness and better adhesion gotten



Blow molding

- Good resistance to the impact (fall of the flasks).
- Shine and transparency
- PP => 600 to 800 Kg/m³ x *HMSPP* => 30 to 50 Kg/m³
- Very light trays for packaging in general



GRAFTALEN™

EB-PER 15003
(mfi=150, 3% active peroxide)

EB-PER 15010
(mfi=150, 10% active peroxide)

EB-PER 15020
(mfi=150, 20% active peroxide)

EB-PER 15040
(mfi=150, 40% active peroxide)

EB-PER 00703 results .

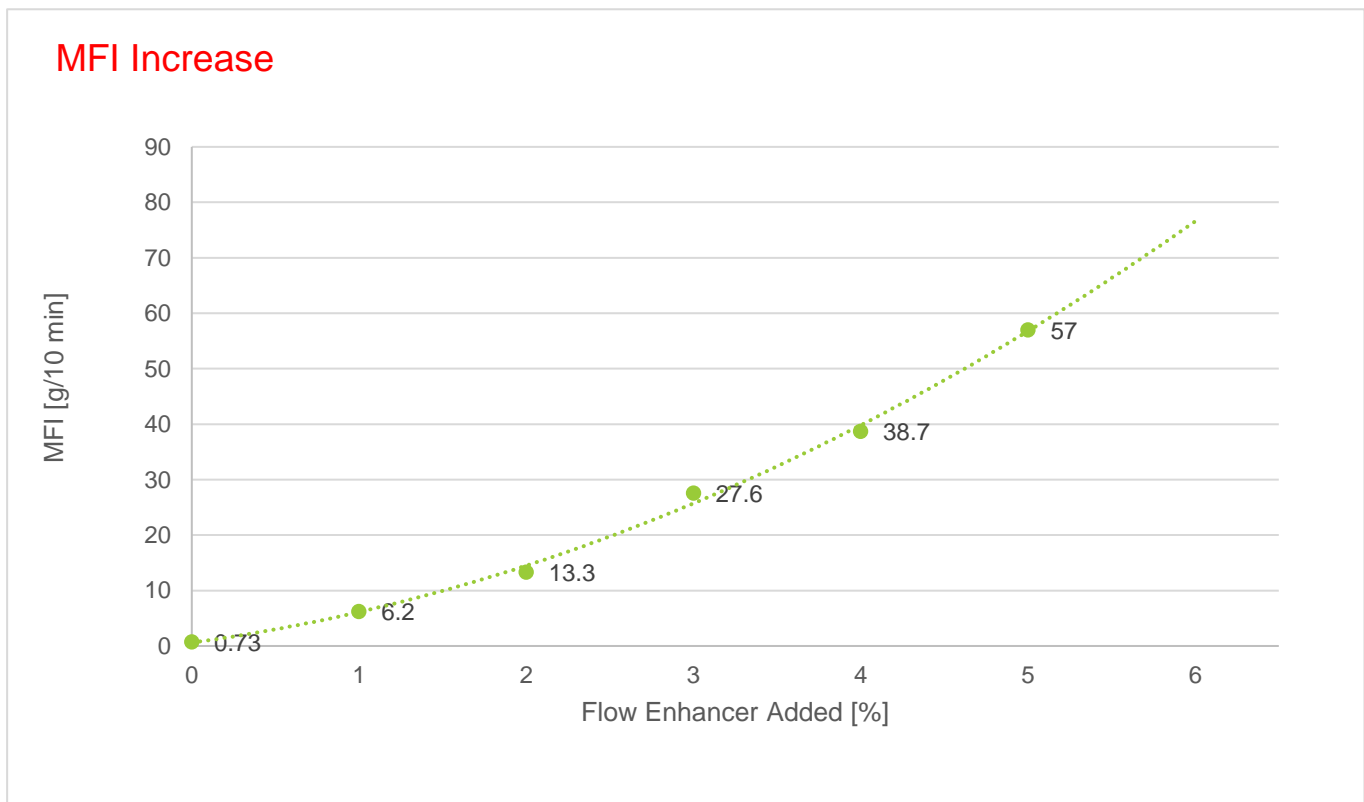
GRAFTALEN™ PP-FER is a polymeric additive for polypropylene, designed to increase melt flow of polypropylene and polypropylene compounds.

Special Features and Benefits

- Make PP flow more easily
- Increase MFI of existing PP and PP compounds
- Thin wall injection molding

Processing

- Processable on most thermoplastics processing equipment.





GRAFTALEN™ SA is an additive for polymers, used for regulating rheological properties and as release agent for injection molding.

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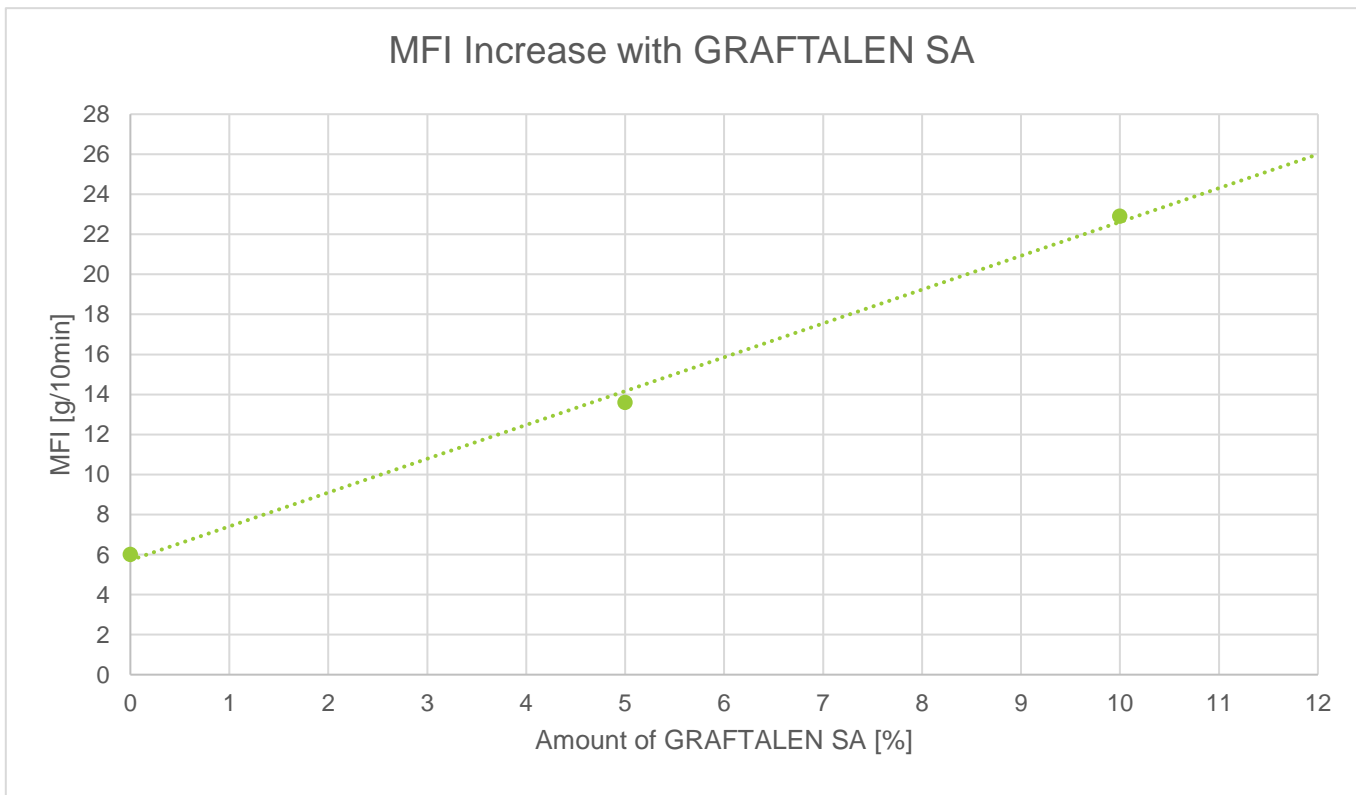
SA

Special Features and Benefits

- GRAFTALEN™ SA functions as rheology modifier to increase material's Melt Flow Index,
- Release agent, for easier demolding of injection molded parts.

Processing

- Should be added to base materials in quantities, from 0,1% to 10%, during processing.



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MB-EMAH 00720

Ethylene-Maleic
Anhydride Copolymer in
Ethylene Butyl Acrylate
Carrier



GENERAL INFORMATION

This product is a copolymer of ethylene and maleic anhydride with 80% of maleic anhydride by weight in ethylene-butyl acrylate carrier resin. Due to its high number of reactive anhydride groups, it has excellent interactions with polar functional groups.

GRAFTALEN™ MB-EMAH 00720 is primarily designed for *increasing mechanical and melt-flow properties in engineering plastics.*

PRODUCT INFORMATION

GRAFTALEN™ MB-EMAH 00720 - is a great compatibilizer for polyamides and polyamide compounds. Increases mechanical properties of base material (Impact Strength, Flexural Properties). Improved wear resistance and melt strength.

Processing

- Is processable on most thermoplastics processing equipment,
- Works best when polyolefin and calcium carbonate content is lower than 5%, and TiO₂ content is lower than 0,5%.



PRODUCT INFORMATION

GRAFTABOND™ MB-EGMA is a *high performance* glycidyl methacrylate masterbatch based on ethylene copolymer.

The high GMA content allows this material to perform as a *chain extender* and compatibilizer for polyesters and polyester compounds

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MB-EGMA

MB-EMAH

Polyethylene Based Masterbatch with Glycidyl Methacrylate



PRODUCT INFORMATION

GRAFTALEN™ MB-EMAH can be used in the following applications:

- Standard toughening agent (golf balls, cable compounds...),
- Chain extender for polyesters and polyester compounds,
- Compatibilizer for polyesters and polyester compounds.



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