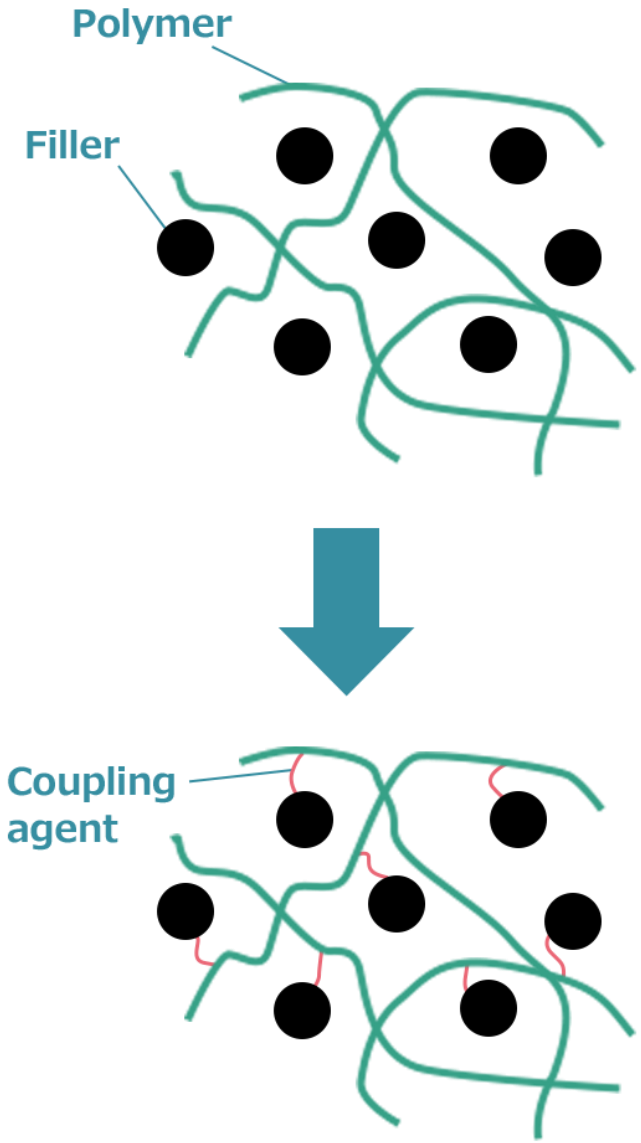
GRAFT POLYMER

COMBINE INCOMPATIBLE

SOLUTIONS FOR PP REINFORCED COMPOUNDS

2021

INTRODUCTION



Polypropylene (PP), coupled with various reinforcing materials provides an improvement in the material characteristics. Reinforcement increases the spectrum of mechanical characteristics, e.g. rigidity, bending strength, and service temperature.

These products are typically used in interiors and exteriors in the automotive industry, in the construction industry, in electrical engineering, and for technical components and the household sector.

Producers use coupling agents during manufacturing PP reinforced compounds.

GP PRODUCTS FOR PP REINFORCED COMPOUNDS

GRAFTABOND PP-MAH 100025 CA
GRAFTABOND PP-MAH 70025 CA

Coupling agents for PP + GF (short/long)

High Grafting 2.5-3% - Effective dosage at 0.65-1.0%

- Low VOC & FOG

GRAFTABOND PP-MAH 100025 CA
GRAFTABOND PP-MAH 70025 CA

Coupling agents for PP + mineral fillers & wood

High Grafting 2.5-3% - Effective dosage at 1-3%

GRAFTAKIT FS

Fog Suppression Kit (used as addition to the CA)

- Low dosage 0.3%-0.8%
- Improve FOG Gravimetic & Reflectometric Results

GRAFTASYNT APP-TEAB

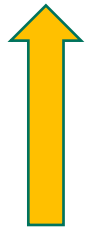
Intumescent **flame retardant**

- Dosage 20-25% (Final dosage depends on the filler % in the compound)

GP COUPLING AGENT EFFICIENCY IN GF REINFORCED PP

Test	GRAFTABOND PP-MAH 100025 CA Dosage 0.8%	SCONA 9112 Dosage 1.5%
Glass Fiber	30%	30%
Density	1.133000	1.135000
Flexural F-78 Chord Modulus (.05-.25% Strain)	7549.100	
HDT (ISO) Under Load @ 1820 KPa Flatwise	149.3000	150.000
HDT (ISO) Under Load @ 455 KPa Flatwise	159.5000	160.000
Izod Impact (ISO A Notched) @ 23C Complete Break	--	
Izod Impact (ISO A Notched) @ 23C Hinge Break	11.44500	NA
Tensile T-71 Chord Modulus (.05-.25% Strain)	7484.300	7100-7200
Tensile T-72 Elongation (Strain) @ Break w/ Extensometer	3.5-4.100	3.5-4.000
Tensile T-72 Strength (Stress) @ Break	104.5000	90-95
Charpy Impact (ISO Notched) @23C Complete Break (Edgewise)	--	NA
Charpy Impact (ISO Notched) @23C Hinge Break (J/m)	11.34400	9-12
Charpy Impact (ISO Notched) @ -30C Complete Break (Edgewise)	9.397000	8-9
Charpy Impact (ISO Un-Notched) @23C Complete Break	60.91400	50-55
Charpy Impact (ISO Un-Notched) @ -30C Complete Break	62.309000	NA
Charpy Impact (VW Notched) @23C Complete Break (Broadside)	10.030000	NA
Charpy Impact (VW Notched) @ -40C Complete Break (Broadside)	8.838000	NA
Charpy Impact (VW Un-Notched) @23C Complete Break (Broadside)	34.398000	NA

PP-MAH 100025 CA is ALSO EFFECTIVE IN SMALLER DOSAGE 0.65%



FOGGING TEST RESULTS

What is fogging?

The additives contained in the materials used as automotive interior materials volatilize in the inside of a car when the temperature rises and condense onto the internal surfaces of the window panes that have been cooled by outside air. As a result, the front glass and window panes are clouded, disturbing a field of view. This phenomenon is called “fogging”, and the fogging properties of the materials are reproduced and evaluated.

Fogging test was done at 100° C for 12 h, on 1 g of the prepared PP-GF 30 compound.

Coupling agent used	Fog Deposit [mg]
SCONA TSPP 10213/9112	16.2
GRAFTABOND™ PP-MAH 10025 CAFU	0.4

GRAFTABOND PP-MAH 100025 CA

offers the best color and properties together, and it is made in a one-step process with extrusion only (granules can be provided with underwater pelletizing)

FOG SUPPRESSION KIT

GRAFTAKIT FS is reactive masterbatch, designed to provide extra fog suppression, can be used with any type of CA in the polypropylene compounds.

Applications

Fog suppression additive for PP filled compounds (glass/natural fibers, mineral fillers, halogen free flame retardants) and PP blends with polar polymers (polyamides, polyesters, etc.)

Processing

GRAFTAKIT FS is processable on most thermoplastics processing equipment. Preferable for: Extrusion (Compounding)

Dosage of this grafting kit is recommended between 0.3%-0.8%, depending on the final formulation.

GRAFTASYNT APP*-TEAB

Performance flame-retardant powder additive, is a highly engineered boron mix & modified APP.

Designed to reduce flame propagation in plastics (PP, PE) and coating.

APP* – modified Amino Polyphosphate
TEAB – Triethanolamine borat (Boratrane)

- Achieve V-0 rating at low loading levels from 25%
- Dosage from 25% (Depends on the compound type and filler content)

INTUMESCENT FLAME RETARDANT
COST-EFFECTIVE

GRAFT POLYMER
COMBINE INCOMPATIBLE

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