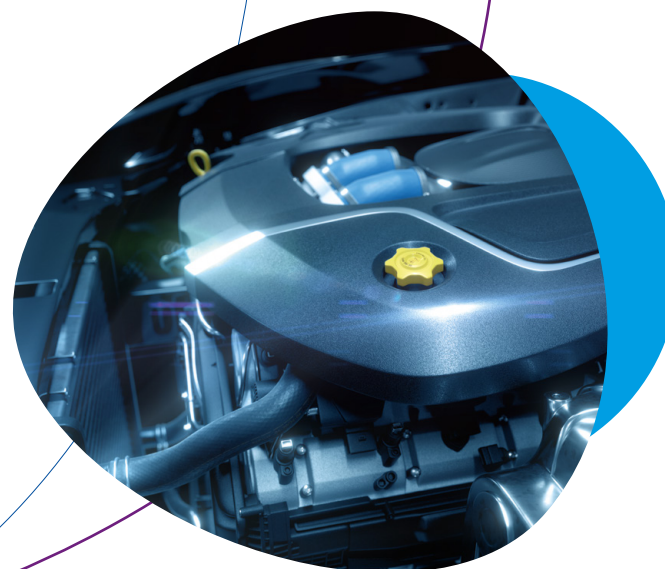


PRODUCT GUIDE

SCONA MODIFIERS

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Abbreviations

AA	Acrylic acid
EBA	Ethylene butyl acrylate copolymer
EVA	Ethylene vinylacetate copolymer
FTIR	Fourier transform infrared
GMA	Glycidyl methacrylate
HDPE	High density polyethylene
LDPE	Low density polyethylene
LLDPE	Linear low density polyethylene
MAH	Maleic anhydride
MFR	Melt mass-flow rate
MVR	Melt volume-flow rate
OBC	Olefin block copolymer
PA	Polyamide
PBAT	Polybutylene adipate terephthalate
PBT	Polybutylene terephthalate
PET	Polyethylene terephthalate
PLA	Polylactic acid
POE	Ethylene octene copolymer
PP	Polypropylene
PP-C	Polypropylene copolymer
PP-H	Polypropylene homopolymer
PS	Polystyrene
SEBS	Styrene ethylene/butylene styrene block copolymer
TPE-S	Thermoplastic elastomer based on styrene
UD	Unidirectional

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Further brochures for thermoplastics can be found on our website:
www.byk.com/en/service/downloads/technical-brochures



Polyethylene-based modifiers

Product	Delivery form		Product data					Application							Typical formulation of an application example			
	Pellet	Powder	Base polymer	Grafting functionality	Grafting level*1 (%)	Melt index			Coupling agent for natural fibers	Coupling agent for glass fibers	Coupling agent for fillers	Dispersing aid	Impact modifier	Viscosity modifier		Adhesion promoter	Compatibilizer	
						Method	MFR (g/10 min)	MVR (cm ³ /10 min)										
SCONA 12031	■		HDPE	MAH	0.36–0.44	190 °C, 5 kg	23–31		○	○		●					●	Dispersing aid for reducing warpage: 15% in HDPE with 30% Pigment Blue 15:1 and 15% BYK-MAX P 4102
SCONA TPPE 1102 GALL	■		LLDPE	MAH	1.7	190 °C, 2.16 kg	10		●	●	●	○					●	Coupling agent: 1.5% for binding 60% natural fibers in LDPE Compatibilizer: 3% in LDPE with 30% PA content
SCONA TPPE 1102 PALL		■	LLDPE	MAH	>1.5	190 °C, 2.16 kg	1–6		●	●	●	○					●	Coupling agent: 1.5% for binding 60% natural fibers in LDPE Compatibilizer: 3% in LDPE with 30% PA content
SCONA TPPE 1212 PAHD		■	HDPE	MAH	>1.4	190 °C, 2.16 kg	0.5–2		○	○							●	Coupling agent: 1.5% for binding 60% natural fibers in HDPE Compatibilizer: 3% in HDPE with 30% PA content
SCONA TPPE 2400 GAHD	■		HDPE	AA	5	190 °C, 2.16 kg		11				○	○	●	○		●	Viscosity modifier: 3% in PA for a significant increase in viscosity
SCONA TPPE 2400 PAHD		■	HDPE	AA	5	190 °C, 2.16 kg		2				○	○	●	○		●	Viscosity modifier: 3% in PA for a significant increase in viscosity
SCONA TPPE 5002 PALL		■	LLDPE	MAH	approx. 1	190 °C, 2.16 kg	12–20		○	○	○						●	Compatibilizer: 5% for compatibilization of polar components in PE
SCONA TSPE 2102 GAHD	■		HDPE	MAH	>1.5	190 °C, 2.16 kg		1–4	●	●							○	Coupling agent: 1.0% for binding 60% natural fibers in LDPE

● Especially recommended

○ Recommended

*1 According to the BYK FTIR test method

Typical dosages (product specific recommendations can be found in the respective TDS):

Coupling agent: 1–6 %
Dispersing aid: 1–10 %
Other applications: 3–15 %



Polypropylene-based modifiers (1/2)

Product	Delivery form		Product data					Application							Typical formulation of an application example			
	Pellet	Powder	Base polymer	Grafting functionality	Grafting level ** (%)	Melt index			Coupling agent for natural fibers	Coupling agent for glass fibers	Coupling agent for carbon fibers	Coupling agent for fillers	Dispersing aid	Impact modifier	Viscosity modifier	Adhesion promoter	Compatibilizer	
						Method	MFR (g/10 min)	MVR (cm ³ /10 min)										
SCONA 20070	■		PP-H	MAH	0.08–0.12	190 °C, 1.2 kg	13–20		●				○			●	●	Adhesion promoter: 30% in PP as tie layer
SCONA 20097	■		PP-H	MAH	0.40–0.50	190 °C, 1.2 kg	25–30* ³		●				○				●	Coupling agent: 2% for fast wetting of 30% long glass fibers or glass mats in PP
SCONA 20098	■		PP-H	MAH	0.50–0.55	190 °C, 1.2 kg	15–35* ³		●				○				●	Coupling agent: 1.8% for fast wetting of 30% long glass fibers or glass mats in PP
SCONA 25097	■		PP-C	MAH	0.58–0.63	190 °C, 1.2 kg	20–30* ³		●				○				●	Coupling agent: 1.2% for glass fibers in impact modified PP
SCONA TPPP 1616 FA		■	PP-H	Styrol	approx. 10	190 °C, 2.16 kg	8–16										●	Compatibilizer: 10% for the compatibilization of a PS/PP blend
SCONA TPPP 2003 FB		■	PP-C	MAH	0.9–1.3	190 °C, 2.16 kg	1–5						●	●			●	Impact modifier: 1.2% to improve the properties of PET strapping tape
SCONA TPPP 2003 GB	■		PP-C	MAH	0.9–1.3	190 °C, 2.16 kg	3–8						●	●			●	Impact modifier: 1.2% to improve the properties of PET strapping tape
SCONA TPPP 2112 FA		■	PP-H	MAH	0.9–1.2	190 °C, 2.16 kg	2–7						●			●		Dispersing aid: 30% for exfoliation of 30% clay in PP
SCONA TPPP 2112 GA	■		PP-H	MAH	0.9–1.2	190 °C, 2.16 kg	4–8						●			●		Dispersing aid: 30% for exfoliation of 30% clay in PP
SCONA TPPP 6102 GA	■		PP-H	MAH	>0.9	190 °C, 2.16 kg	20–40		●	●	●	●				●		Coupling agent: 3% for 30% glass fibers in a PP/PET blend
SCONA TPPP 8104 FA		■	PP-H	GMA	2.5	230 °C, 2.16 kg	40–100										●	Compatibilizer: 5% for compatibilization of 20% PLA in PP
SCONA TPPP 8112 FA		■	PP-H	MAH	1.4	190 °C, 2.16 kg	>80		●	●							●	Coupling agent: 0.8% for binding 30% glass fibers in PP (3% for alkali resistance)
SCONA TPPP 8112 GA	■		PP-H	MAH	1.4	190 °C, 2.16 kg	>80		●	●							●	Coupling agent: 0.8% for binding 30% glass fibers in PP (3% for alkali resistance)
SCONA TPPP 9012 FA		■	PP-H	MAH	>0.9	190 °C, 2.16 kg	50–110		●									Coupling agent: 0.8% for binding 30% glass fibers in PP
SCONA TPPP 9012 GA	■		PP-H	MAH	>0.9	190 °C, 2.16 kg	50–110		●									Coupling agent: 0.8% for binding 30% glass fibers in PP

● Especially recommended

○ Recommended

** According to the BYK FTIR test method

*³ Measured with a die 8/1



Polypropylene-based modifiers (2/2)

Product	Delivery form		Product data					Application							Typical formulation of an application example			
	Pellet	Powder	Base polymer	Grafting functionality	Grafting level** (%)	Melt index			Coupling agent for natural fibers	Coupling agent for glass fibers	Coupling agent for carbon fibers	Coupling agent for fillers	Dispersing aid	Impact modifier		Viscosity modifier	Adhesion promoter	Compatibilizer
						Method	MFR (g/10 min)	MVR (cm ³ /10 min)										
SCONA TPPP 9112 FA		■	PP-H	MAH	>1.0	190 °C, 2.16 kg	70–120		●			●						Coupling agent: 0.8% for binding 30% glass fibers in PP
SCONA TPPP 9112 GA	■		PP-H	MAH	>1.0	190 °C, 2.16 kg	70–120		●			●						Coupling agent: 0.8% for binding 30% glass fibers in PP
SCONA TPPP 9212 FA		■	PP-H	MAH	≥1.8	190 °C, 2.16 kg	70–140		●	●	●	●						Coupling agent: 4% for binding 30% carbon fibers in PP
SCONA TPPP 9212 GA	■		PP-H	MAH	≥1.8	190 °C, 2.16 kg	80–140		●	●	●	●						Coupling agent: 4% for binding 30% carbon fibers in PP
SCONA TSPP 5013 GB		■	PP-C	MAH	0.8–1.0	190 °C, 2.16 kg		45–65	●						●	●		Adhesion promoter: 25% in PP to improve adhesion to polar surfaces
SCONA TSPP 8219 GA		■	PP-H	n.a.	2	190 °C, 2.16 kg	100			●		●						Coupling agent: 0.8% for MAH-free binding 30% glass fibers in PP
SCONA TSPP 10213 GB		■	PP-C	MAH	2.0	170 °C, 1.2 kg		40–100	●	●	●	●					●	Coupling agent: 1.0% for binding 60% natural fibers in PP recyclates
SCONA TSPP 21113 GA		■	PP-H	MAH	≥1.0	170 °C, 1.2 kg		140–220	●	●		●					●	Coupling agent/adhesion promoter: 3% in PP to improve the properties of UD tapes
SCONA TSPP 22113 GA		■	PP-H	MAH	≥1.8	170 °C, 1.2 kg		130–220	●	●	●							Coupling agent: 4% for binding 30% carbon fibers in PP
SCONA TSPPR 30113 GB		■	PP elastomer	MAH	1.2	170 °C, 1.2 kg		50	●			●	○				● ●	Compatibilizer: 5% in PP recyclates with PE content
SCONA TSPPR 31113 GB		■	PP elastomer	MAH	1.2	170 °C, 1.2 kg		100	●			●	○				● ●	Adhesion promoter: 3% in PP to improve adhesion to polar surfaces

● Especially recommended

○ Recommended

*² According to the BYK FTIR test method*³ Measured with a die 8/1

Typical dosages (product specific recommendations can be found in the respective TDS):

Coupling agent: 0.5–4 %
 Dispersing aid: 10–30 %
 Other applications: 3–25 %



Further modifiers (1/2)

Product	Delivery form		Product data					Application							Typical formulation of an application example		
	Pellet	Powder	Base polymer	Grafting functionality	Grafting level**4 (%)	Melt index			Coupling agent for natural fibers	Coupling agent for glass fibers	Coupling agent for fillers	Dispersing aid	Impact modifier	Viscosity modifier		Adhesion promoter	Compatibilizer
						Method	MFR (g/10 min)	MVR (cm ³ /10 min)									
SCONA TPEV 1110 PB		■	EVA	AA	>2	190 °C, 21.6 kg	<15						●	●		Viscosity modifier: 3 % in PA to significantly increase viscosity	
SCONA TPKD 8102 PCC		■	SEBS	MAH	>1.0	230 °C, 5 kg		1–8					●		●	Adhesion promoter: 30 % to improve overmolding adhesion of a TPE-S to a polar hard component	
SCONA TPKD 8304 PCC		■	SEBS	GMA	>3.0	230 °C, 5 kg		5–15					●		●	Impact modifier: 10 % in PBT or PLA	
SCONA TPJET 4214 PA		■	PET	GMA	>2.0	n.a.							●	●		Viscosity modifier: 8 % in PET to significantly increase viscosity	
SCONA TPPL 1112 PA		■	PLA	MAH	>1.0	190 °C, 2.16 kg		1–8	●	○	○					● Coupling agent: 3 % to incorporate natural fibers into PLA for better processability	
SCONA TPPL 1214 PA		■	PLA	GMA	>2.5	n.a.				○				●		○ Viscosity modifier: 7 % in PLA for significant strand widening	
SCONA TPPL 1310 PA		■	PLA	AA	>3.0	190 °C, 2.16 kg		3–10				●	●	○		Viscosity modifier: 3 % as synergist with SCONA TPPL 1214 PA in PLA	
SCONA TPPL 5112 PA		■	PLA	MAH	>1.0	190 °C, 2.16 kg		20–30	●	●	○	○				● Compatibilizer: 5 % in a PLA/PBAT blend	
SCONA TSEB 2113 GB		■	EBA	MAH	0.6	190 °C, 2.16 kg		3–8		○		●	●			Coupling agent: 7 % for incorporating glass fibers into PA with increased impact strength	
SCONA TSIN 4013 GC		■	OBC	MAH	>0.5	190 °C, 5 kg		2–5					●		●	Impact modifier: 10 % in PA 6.6 for high impact strength with high temperature stability	
SCONA TSKD 9103		■	SEBS	MAH	>1.3	230 °C, 5 kg		15–35					●		●	● Adhesion promoter: 30 % to improve overmolding adhesion of a TPE-S to a polar hard component	

● Especially recommended

○ Recommended

*4 According to the BYK FTIR test method



Further modifiers (2/2)

Product	Delivery form		Product data					Application							Typical formulation of an application example		
	Pellet	Powder	Base polymer	Grafting functionality	Grafting level ^{*4} (%)	Melt index			Coupling agent for natural fibers	Coupling agent for glass fibers	Coupling agent for fillers	Dispersing aid	Impact modifier	Viscosity modifier		Adhesion promoter	Compatibilizer
						Method	MFR (g/10 min)	MVR (cm ³ /10 min)									
SCONA TSPOE 1002 CMB 1-2	■		POE	MAH	>0.45	190 °C, 21.6 kg	8-14						●				Impact modifier: 10% in PA for high impact strength
SCONA TSPOE 1002 GBLL	■		POE	MAH	1.45-1.65	190 °C, 21.6 kg	6-23						●		●	●	Impact modifier: 15% in PA for impact strength down to -60 °C with lower effect on viscosity
SCONA TSPOE 3013 GBLL	■		POE	MAH	0.6	190 °C, 2.16 kg	1.2						●			●	Impact modifier: 15% in PA for impact strength with high flowability

● Especially recommended

○ Recommended

*4 According to the BYK FTIR test method

Typical dosages (product specific recommendations can be found in the respective TDS):

Coupling agent: 1-6 %

Dispersing aid: 1-10 %

Other applications: 3-30 %

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