

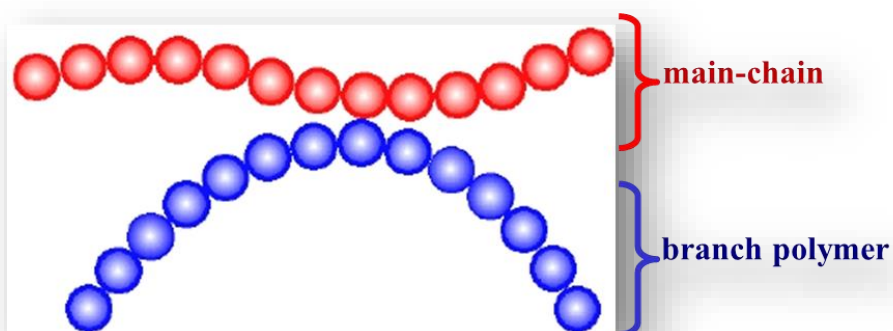
Graftalloy

Using our own
proprietary
technology

POLYMERIC ALLOYS -GRAFTALLOY™

Combination of the best properties of separate materials, to create the best *Co-continuous nano-morphology*.

By grafting branch polymers to polyolefin based polymers, we can improve properties of many materials, as well as compatibilize blends.



Distributed in Italy by:











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PRODUCT GRADES - GRAFTALLOY™

Item	Test Method	Unit	GRAFTALLOY™ Grade				
			LD-PS	LD-SAN	PP-SAN	EB-PS	EB-SAN
Main Chain Polymer	-	-	LDPE	LDPE	PP	EBA	EBA
Branch Polymer	-	-	PS	SAN	SAN	PS	SAN
MFI	ISO 1133	g/10 min	190°C, 2,16 kg	190°C, 2,16 kg	230°C, 2,16 kg	190°C, 2,16 kg	190°C, 2,16 kg
			57,44	35	27	6,8	6,9
Tensile Strength at Yield	ISO 527, 1A, 20 mm/min	MPa	5,3	8,5	28,6	8,8	10
Elongation at Break	ISO 527, 1A, 20 mm/min	%	11	9,8	4,2	40	30
Melting Temp.	DSC	°C	100	100	160	95	95
Appearance							
							

PRODUCT APPLICATIONS - GRAFTALLOY™

Improved Properties	GRAFTALLOY™ Grade	MATERIAL											
		PP	ABS	PMMA	PLA	POM	PA	PET	PBT	PC	mPPE	PPS	TPE
Tribological Properties	LD-PS		●			●●	●●		●	●	●	●	
	LD-SAN		●			●●	●●		●	●	●	●	
Scratch Resistance	LD-PS		●	●						●			
	LD-SAN		●	●						●			
Impact Strength	PP-SAN			●			●	●●	●●			●	
	EB-SAN						●	●●	●●			●●	
Thixotropy	PP-SAN	●											
Melt Flow Properties	LD-PS										●		●
	PP-SAN	●	●●										●
Inorganic Filler dispersion	PP-SAN			●	●		●	●	●				
Chemical Resistance	PP-SAN												
Matting	EB-SAN	●	●●										

High performance (●●)

Good performance (●)



GRAFTALLOY™ LD-PS 06000 - is a high performance polymer alloy, consisting of LDPE, with chemically bound PS. Its main characteristics are good compatibility with polyolefins, PLA, PC, ABS, PS blends.

GRAFTALLOY™

LD-PS 06000

LD-SAN 01000

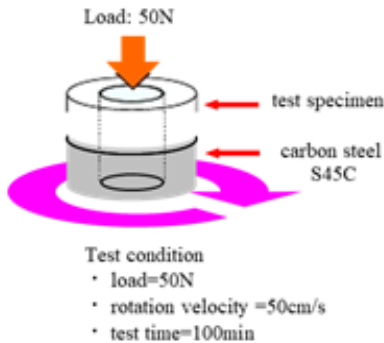
Low Density Polyethylene – Polystyrene alloy/ Styrene Acrylonitrile

Applications

- Improve tribological properties
- Improve Melt Flow Index of blends
- Improves mechanical characteristics

Processing

- Can be processed with all usual processing technologies (Injection moulding, extrusion, blow moulding, thermoforming...)
- Optimal processing temperatures are between 180°C and 200°C.



Abrasion Mass Loss Measurement

GRAFTALLOY™ LD-SAN 01000 - is a high performance polymer alloy, consisting of LDPE, with chemically bound SAN. Its main characteristics are good compatibility with polyolefins, ABS, PLA, PC blends.

Applications

- Improve tribological properties
- Improve Melt Flow Index of blends
- Improves mechanical characteristics

Processing

- Can be processed with all usual processing technologies (Injection moulding, extrusion, blow moulding, thermoforming...)
- Optimal processing temperatures are between 180°C and 200°C.

GRAFTALLOY™ LD-PS / LD-SAN - **Improve tribological properties.**

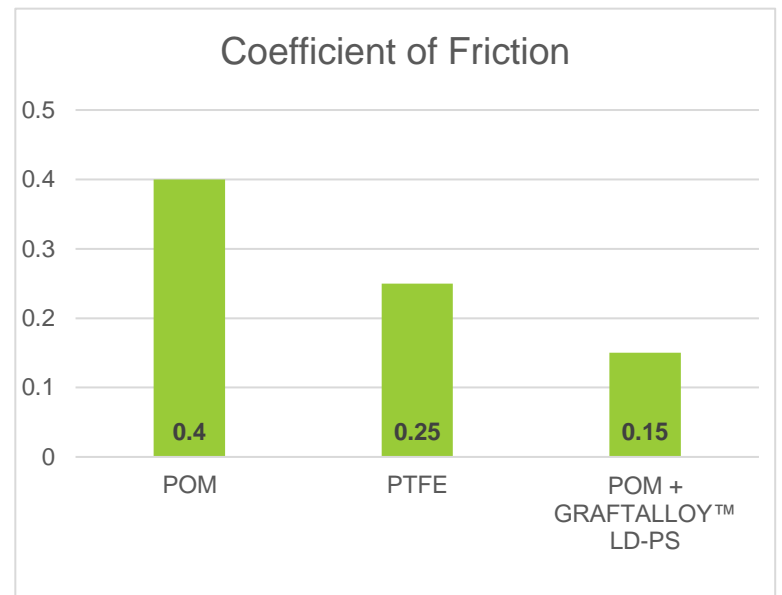
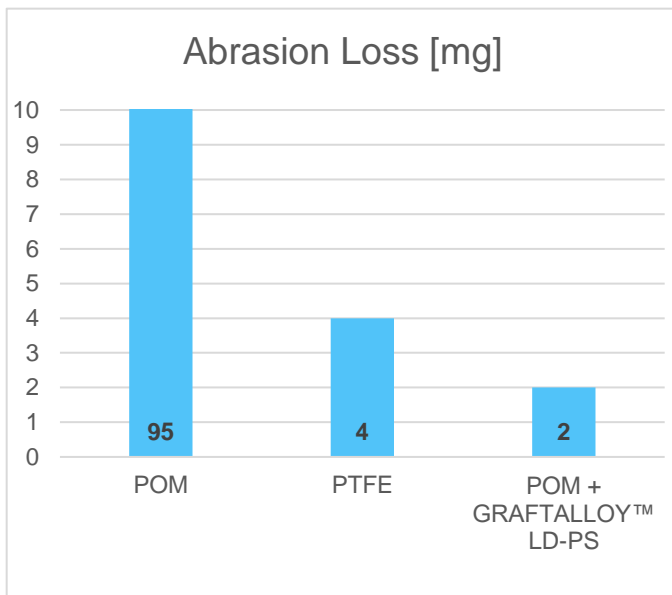
Example:

We measured mass loss from abrasion and coefficient of friction of:

- POM
- POM + 10 wt.%GRAFTALLOY™ LD-PS
- PTFE

GRAFTALLOY™ LD-PS **improves:**

- Abrasion loss
- Coefficient of kinetic friction



POM with GRAFTALLOY™ LD-PS - **has better tribological properties than PTFE.**

PRODUCT APPLICATIONS FOR BLENDS - GRAFTALLOY™

GRAFTALLOY™ GRADES FOR BLENDS		Polymer A									
		Poly-olefin	PS	ABS	PMMA	PLA	PA	PET	PBT	PC	mPPE
Polymer B	Poly-olefin		LD-PS PP-SAN	LD-SAN PP-SAN EB-SAN		LD-SAN		EB-SAN	EB-SAN	LD-PS PP-SAN	
	PS	LD-PS PP-SAN				EB-PS	EB-PS		EB-PS	EB-PS	
	ABS	LD-SAN PP-SAN EB-SAN				EB-SAN				EB-SAN	EB-SAN
	PMMA							EB-SAN	EB-SAN		
	PLA	LD-SAN	EB-PS	EB-SAN			EB-SAN		EB-SAN	EB-SAN	
	PA		EB-PS			EB-SAN		EB-SAN	EB-SAN	EB-SAN	EB-PS
	PET	EB-SAN			EB-SAN		EB-SAN			EB-SAN	
	PBT	EB-SAN	EB-PS			EB-SAN	EB-SAN			EB-SAN	EB-PS
	PC	LD-SAN PP-SAN	EB-PS	EB-SAN		EB-SAN	EB-SAN	EB-SAN	EB-SAN		
	mPPE	LD-PS		EB-SAN			EB-PS		EB-PS		

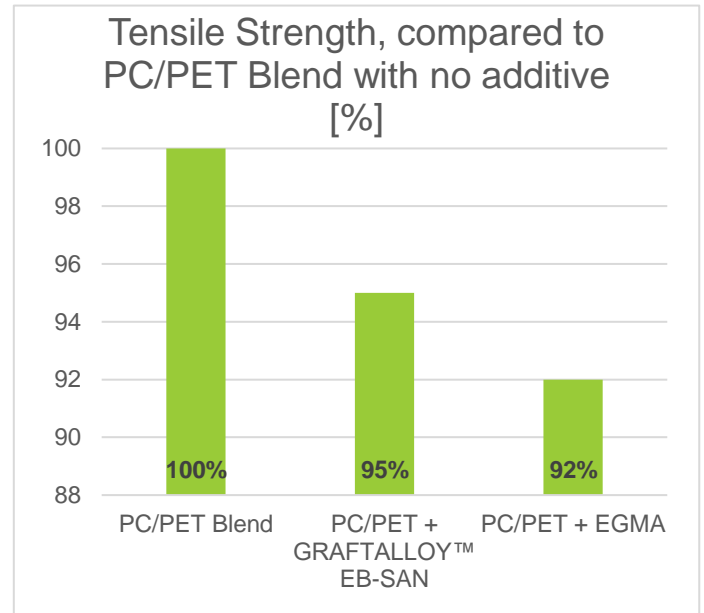
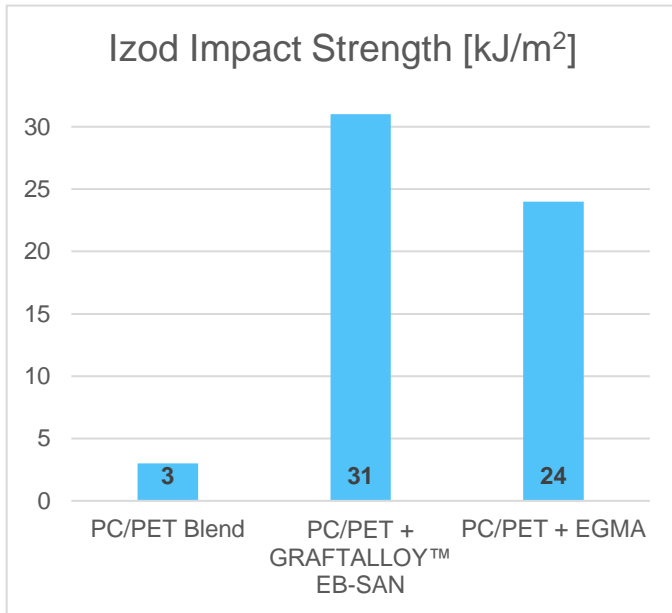
grades with bolded names have the **highest performance** for indicated blends

In blends, Polymer B is in greater quantity than Polymer A.

Improve compatibility and *mechanical properties* of blends with GRAFTALLOY™.

Example:

- PC/PET blend
- PC/PET + 5 wt.% GRAFTALLOY™ EB-SAN
- PC/PET + 5 wt.% EGMA



Impact Strength of blend *increases significantly*, with *only 5%* reduction in maximum tensile stress, when using GRAFTALLOY™ EB-SAN.

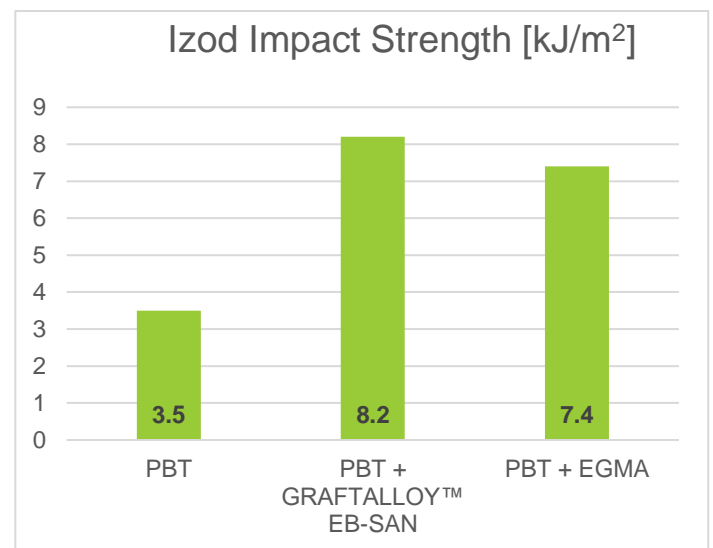
GRAFTALLOY™ PP-SAN / EB-SAN

Improve Impact Strength

Example:

Comparing Izod impact strength of:

- PBT
- PBT + 10 wt.% GRAFTALLOY™ EB-SAN
- PBT + 10 wt.% EGMA



PBT with GRAFTALLOY™ EB-SAN has better Izod Impact Strength than PBT with EGMA.



GRAFTALLOY™

PP-SAN 03000

EB-SAN 00700

Polypropylene / Ethylene
Butyl Acrylate – Styrene-
Acrylonitrile Alloy

GRAFTALLOY™ PP-SAN 03000 - is a high performance polymer alloy, consisting of PP, with chemically bound SAN. Its main characteristics are good compatibility with polyolefins, ABS, PLA, PC blends.

Applications

- Improve tribological properties
- Improve Melt Flow Index of blends
- Improves mechanical characteristics
- Improve scratch resistance
- Improve thixotropy
- Improve chemical resistance

Processing

- Can be processed with all usual processing technologies (Injection moulding, extrusion, blow moulding, thermoforming...)
- Optimal processing temperatures are between 180°C and 200°C.

GRAFTALLOY™ EB-SAN 00700 - is a high performance polymer alloy, consisting of EBA, with chemically bound SAN. Its main characteristics are good compatibility with polyester, ABS and PLA blends with SAN.

Applications

- Impact modifier
- Improves mechanical characteristics
- Increases abrasion resistance

Processing

- Can be processed with all usual processing technologies (Injection moulding, extrusion, blow moulding, thermoforming...)
- Optimal processing temperatures are between 180°C and 200°C.