

FERRONYL E-170

FerroNyl E-170 is a polymeric alloy of nylon and maleic anhydride grafted polyethylene. It is extensively used as a high softening point toughening agent for PA6.

Applications

- In-situ toughening agent for PA6 during injection moulding. Toughness required is a function of FerroNyl E-170 addition level in the PA6 matrix.
- Impact modifier with higher stiffness in recycled PA6.
- Compatibilizer for glass filled and plain polyolefin/nylon alloys.

Key Properties

General	Typical Value (SI)	Test Method
MFI (235 °C/2.16 Kg)	1.0 g/10min	ASTM D1238
Density	0.974 g/cm ³	ASTM D792
Bulk Density	0.54 g/ml	internal method
Bonded Maleic Anhydride (latent)	Medium (%)	internal method

Mechanical	Typical Value (SI)	Test Method
Tensile Strength	14 MPa	ASTM D638/2010
Percentage Elongation	155 %	ASTM D638/2010
Tensile Modulus	30 MPa	ASTM D638/2010
Flexural Modulus	400 MPa	ASTM D790/2010
Flexural Strength	16 MPa	ASTM D790/2010

Hardness	Typical Value (SI)	Test Method
Durometer Hardness		
Shore D	52	ASTM D2240/2004

Thermal	Typical Value (SI)	Test Method
Vicat Softening Temperature	100 °C	ASTM 1525/2010

Storage and Handling Procedures

FerroNyl E-170 should be stored away from heat, sparks and flame. It is mildly hygroscopic, though much less than Nylon. It is not required to be dried prior to processing if taken out from a sealed pack. In case of material lying exposed to humid environments, it is recommended to be dried at 90-95 °C for 2-4 hours depending upon the level of exposure. It can also be dried together with the PA6 granules after pre-mixing.

Processing Conditions

FerroNyl E-170 can be added to Polyamides during in-situ injection moulding to achieve desired level of toughness. Maximum processing temperature should not generally exceed 280 °C. At temperatures above 290 °C, these speciality polymers can evolve low concentrations of fumes. If overheated, more extensive decomposition may occur due to exposure of overheated polymers to atmospheric oxygen. Adequate local ventilation should be provided to remove the fumes from the work area.

Packaging

FerroNyl speciality polymers are supplied in pre-dried form in 25 Kg (55 lbs) PE lined, HD woven sack-laminated paper bags and 500 Kg (1102 lbs) FIBC's. Depending upon customer's requirement, the bags can be further palletized for dispatch. They should be stored in cool and dry place.

FERRO-PLAST SRL - Via Grandi 25 - 20090 Vimodrone (MI) - Tel 02 27409415 Fax 02 27409420 - info@ferroplast.com - www.ferroplast.com

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