

# ADNYL<sup>®</sup> E-170 Speciality Polymers

## TECHNICAL DATA SHEET

ADNYL<sup>®</sup>E-170 is a polymeric blend 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 ADNYL<sup>®</sup>E-170 addition level in the PA6 matrix
- Impact modifier for 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 g/10min	ASTM D1238
Density	0.974 g/cm <sup>3</sup>	ASTM D792
Bulk Density	0.54 g/ml	PLUSS <sup>®</sup> method
Bonded Maleic Anhydride (latent)	Medium (%)	PLUSS <sup>®</sup> 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

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

Thermal	Typical Value (SI)	Test Method
Softening Point	125-130 °C	PLUSS <sup>®</sup> method
Vicat Softening Temperature	100 °C	ASTM 1525/2010

### Storage and Handling Procedures

ADNYL® 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

ADNYL® 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

OPTIM<sup>®</sup> 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.

The information given here is meant as a guide to determining suitability of our products for the stated applications. It is based on trials carried out by our laboratories and data selected from literature and shall in no event be held to constitute or imply any warranty. The products are intended for use in industrial applications. The users should test the materials before use and satisfy themselves with regard to contents and suitability in the desired application. Our formal specifications define the limits of our commitment. Recommendation herein may not be construed as freedom to infringe/operate under any third party patents. In the event of a proven claim, our liability is limited only to replacement of our material and in no case shall we be liable for special, incidental or consequential damages arising out of usage of our material. This datasheet is subject to change without notice.