

PLUSS[®]



Pluss Polymers is an offshoot of Manas, established to develop and market new technologies and products developed inhouse. Pluss Polymers was incorporated in 1993 to commercialise the technology for grafted modified polymers and alloys and blends. Backed by competent technical staff, laboratory facilities, a good library and technical database with a retrievable wealth of information marketed the OPTIM[®] brand of grafted polymers for the first time in India in 1996.

OPTIM[®] coupling agents and compatibilisers allow plastics manufacturers of world class quality products to *OPTIMise* their compound properties. The ADNYL[®] range of nylon alloys provide the user with extra tough nylon for increased strength.

Profiles and other rigid and flexible containers for thermal energy storage have also been introduced in India for the first time by Pluss Polymers.

TECHNICAL DATA SHEET

Product	: OPTIM [®] E - 170
Series	: 100
Description	: OPTIM [®] E-170 is a high softening point toughening agent for Nylon-6.
Appearance	: Off white to light yellow free flowing granules / pellets.

Properties

MFI (235°C/ 2.16 Kg) :	0.5 g / 10 min
Density :	0.929 g/ml
Softening Point :	125 – 130 ⁰ C
MAH Content :	Medium (Latent)
Medium - 0.5 - 0.8 %	

Applications

OPTIM[®] E – 170 is used to increase the Impact properties of virgin or recycled Nylon 6. It may also be used as compatibiliser for glass filled and plain polyolefin / nylon alloys. The optimum dosage of this product may vary between 7-10 % depending upon the level of toughness required.

It is ideal for in situ toughening during injection moulding where pre heated on in line hopper dried nylon is being used. Its high softening point ensures that no agglomeration will happen in the feed hopper.

Process Conditions

Drying

OPTIM[®] E - 170 is hygroscopic, though much less than normal Nylon. It is not required to be dried if taken from a sealed bag prior to processing. In case of material lying exposed to humid environments, it is recommended to be dried at 90-95⁰C for 2-4 hrs depending upon the level of exposure. It can also be dried together with the Nylon- 6 granules after pre-mixing.

Injection Moulding

High softening point of E-170 makes it ideally suited for insitu toughening of Nylon 6 during injection moulding. It may be hopper blended with Nylon with no danger of agglomeration during hot air drying.

Extrusion Parameters

The coupling reaction provided by series 100 resins are slow at 200⁰C and estimated to be over in less than 2 min. at 240⁰C. Thus, for any application, the normal resin residence time in an extruder system or compounding equipment is adequate for the said reaction and the resultant coupling to occur. Maximum processing temperature should not exceed 280⁰C.

Stoppages

For short interruptions, the extruder should be kept running at a low speed (as low as practical). For longer interruptions and stoppages follow procedure as recommended for Nylon.

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