

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 *OPTIMIZE* 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 - 177
Series	: 100
Description	: OPTIM® E-177 is impact modifier / toughening agent for Nylon-6.
Appearance	: Off white to light yellow free flowing granules / pellets.

Properties

MFI (235°C/ 2.16 Kg):	0.3 g / 10 min
Density	: 0.90 g/ml
Softening Point	: 100 – 105°C
MAH Content	: Medium (Latent)

Applications

OPTIM® E – 177 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 % or even higher depending upon the level of toughness required. It disperses well with Nylon 6 even in the Injection molding machine.

It is ideal for in situ toughening during injection moulding where pre heated or in line hopper dried nylon is being used.

Process Conditions

Drying

OPTIM® E - 177 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 80-85°C 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-177 makes it ideally suited for insitu toughening of Nylon 6 during injection moulding. It may be hopper blended with Nylon, and due to it's good

dispersing properties with Nylon 6, toughening is achieved.

Extrusion Parameters

The coupling reaction provided by series 100 resins are slow at 200°C and estimated to be over in less than two min. at 240°C. 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 280°C.

Stoppages

For short interruptions, the extruder / molding machine 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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