

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.

OPTIM[®]
Chemically Modified Polyolefines

TECHNICAL DATA SHEET

Product : **OPTIM[®] P-613**
 Series : 600
 Description : EP Rubber grafted with anhydride and acid functionality.
 Appearance : White to off white free flowing granules /pellets.

Properties :

Density (gm/ml) 0.83
 MFI @ 190°C, 2.16 Kg 4.0
 MAH content Medium
 Medium – 0.5 – 0.8%

Product Description

OPTIM[®] P-613 is EP Rubber grafted with Maleic Anhydride and is meant for toughening of Polyamides such as Nylon - 6 and Nylon - 6,6. It gives excellent mechanical properties at low temperatures (sub zero conditions).

Applications

Nylon Alloys

This product is designed to produce a super tough nylon alloy. Alloy made with Nylon and PP will get more toughness when they are compatibilised by P-613. Better result can be achieved when Nylon material is compounded with P 613 alone. Results are obtained when compounding is done in high shear machines such as twin screw extruders.

Properties of Alloy/formed are determined by a number of factors. Some of the important ones are:

1. Shear rate
2. Residence time
3. Temperatures
4. Grade of Nylon
5. Composition and
6. Additives package

Wire and Cables

OPTIM[®] P-613 is used as coupling agents for non-halogen flame retardant wire & cable compounds containing fillers such as Aluminium Tri Hydrate (ATH) or Magnesium Hydroxide (Mg(OH)₂). It allows higher loading of fillers in PP based blends. Typically 2-4% (or less) of OPTIM[®] P-613 is recommended depending upon the filler content.

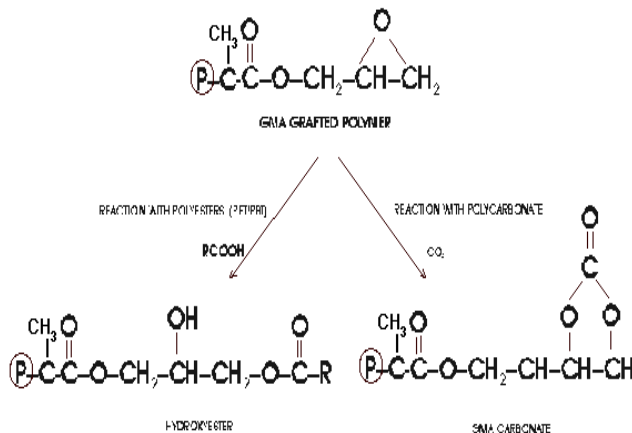
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Processing Conditions

The coupling reaction provided by series 600 resins are slow at 200°C and estimated to be over in less than 2 min. at 240°C. Thus, for any application, the normal resin residence time in an extruder system or a compounding equipment is adequate for the said reaction and the resultant coupling to occur. Maximum processing temperature should not exceed 280°C.

Amine and Hydroxyl Reaction with Anhydride



Recommended Use Level

5-20% based on the weight of composition. The actual addition level will depend on the impact strength desired.

The information given here is meant as a guide to determining suitability of our products for the stated applications. 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. We guarantee that our products will meet our written specifications. Nothing herein shall constitute any other warranty expressed or implied. 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.