Use of OPTIM® to widen the scope of Plastics in Automobiles

OPTIM®s are chemically modified polyolefines designed specifically to enlarge use of plastics materials in high performance applications.

Based on non-polar polyolefines like LDPE, HDPE, LLDPE, EVA, PP or EPDM, OPTIM®s are these polymers grafted with polar molecules like acids & anhydrides by reactive extrusion technique. The product pellets are polymeric in nature with flow, melting and processing characteristics similar to the respective parent polyolefines. OPTIM®s differ from the polyolefines in respect of:

1) Higher chemical reactivity & polarity - this makes them blendable with polar polymers like Nylons, imparting special properties to the nylon.
2) Acting as dispersing agents for colourants and mineral fillers and reinforcements.
3) Coupling agents for fillers like calcium carbonate, talc, glass fibres etc., improving mechanical properties.

For injection moulding of auto components, OPTIM®s offer the following possibilities:

1) Improving impact strength of nylons; particularly in dry and sub-zero temperature conditions. Improved dimensional stability and eliminating the need for post moulding annealing are the other subsidiary benefits.
2) Improving properties of mineral and glass filled polypropylene to replace some of the applications in engineering plastics like Nylon, PBT & polyacetal.
3) Improving flow of filled PP compounds so as to facilitate thin wall and otherwise difficult to fill moulds.

There are three ways in which OPTIM®s can be used for moulding applications:

1) Using a suitable OPTIM® grade as additive in formulating a moulding compound with enhanced properties. This route is taken for substantial improvement in properties of the base material.
2) Using OPTIM® as additive directly in injection moulding workshop for improved performance by reduced rejects.
3) Upgrading in-house generated nylon scrap (rejected components, runners etc.) to economise operations.

What do we offer?

Product	Effect
OPTIM® E-126 / E- 177	Recommended for compounding Nylon 66 as well as in-situ toughening in Nylon 66.
OPTIM® E-142	Recommended for Nylon 6 compounds and upgradation of Nylon 6 scrap.
OPTIM® P-406 / P-424	Coupling agent for glass & mineral filled PP compounds for higher tensile, flexural, & impact strength.In Nylon compounds these bring about dimensional stability & reduction in part weight
OPTIM® P-635	High impact strength in nylon alloys produced by compounding.
OPTIM® GE-340 / GE-344	High impact strength in polyesters like PET / PBT and also PC.
OPTIM® W-104	Better dispersion and higher loading of pigments in polyolefine masterbatches.
OPTIM® P-400/P-440	Increase in flow of filled PP compounds in injection moulding to facilitate mould filling and warpage (stress) free components.
OPTIM® P-613	Extremely high impact strength in nylon alloys produced by compounding. Especially for Nylon / PP alloy.
OPTIM® E-170	Used for in-situ toughening of Nylon 6.
OPTIM® E-131	High thermal stability. Excellent low temperature impact strength both on Nylon 6 and 6,6.

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