

OPTIM[®] P-445 Speciality Polymers

TECHNICAL DATA SHEET

OPTIM[®] P-445 is a maleic anhydride modified homopolymer polypropylene. The grafting operation of the polypropylene backbone is achieved using a new technology that allows high grafting efficiency and low polymer scission.

Applications

- Chemical coupling agent for fillers like mica talc, calcium carbonate, wood flour in PP compound.
- Coupling agent for glass fibres in PP compounds.
- Compatibilizers for blends such as PP/PA and PV/EVOH.

Key Properties

General	Typical Value (SI)	Test Method
MFI (190 °C/2.16 Kg)	110 g/10min	ASTM D1238
Density	0.908 g/cm ³	ASTM D792
Bulk Density	0.51 g/ml	PLUSS [®] method
Bonded Maleic Anhydride	Very High (%)	PLUSS [®] method

Mechanical	Typical Value (SI)	Test Method
Tensile Strength	34 MPa	ASTM D638/2010
Percentage Elongation	6 %	ASTM D638/2010
Tensile Modulus	870 MPa	ASTM D638/2010
Flexural Modulus	1890 MPa	ASTM D790/2010
Flexural Strength	52 MPa	ASTM D790/2010

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Hardness	Typical Value (SI)	Test Method
Durometer Hardness		
Shore D	78	ASTM D2240/2004

Thermal	Typical Value (SI)	Test Method
Melting Temperature	161 °C	DSC
Vicat Softening Temperature	150 °C	ASTM 1525/2010

Storage and Handling Procedures

OPTIM® P-445 is mildly hygroscopic and should be stored in a dry and cool area. It is recommended that prior to processing; the requisite quantity of material to be used should be dried in a hopper dryer or oven at 80-95 °C for about 2 hours for obtaining best results. Loss of anhydride functionality may occur due to conversion to acid groups by reaction with atmospheric moisture.

Read and understand Material Safety Data Sheet (MSDS) for more detailed information on the safe handling and disposal of these speciality polymers.

Processing Conditions

A slight pungent odour is normal during processing of OPTIM® P-445. During processing, the compounding parameters that can lead to optimized performance include extruder type, screw design, barrel temperature, screw speed, throughput, residence time and material feeding sequence. Maximum processing temperature should not generally exceed 280 °C.

Packaging

OPTIM® specialty 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.