

# OPTIM<sup>®</sup> E-119 Speciality Polymers

## TECHNICAL DATA SHEET

OPTIM<sup>®</sup>E-119 is a maleic anhydride modified linear low density polyethylene. It is used to improve adhesion of HFFR fillers such as Magnesium Hydroxide [Mg(OH)<sub>2</sub>] & Alumina Trihydrate (ATH) and the polymer matrix.

### Applications

- Chemical coupling agent for halogen free flame retardant fillers in wire and cable compounds.
- Coupling agent for PE based aluminum composite panels (ACP's) filled with high filler content.
- Compatibilizer for Nylon scrap –fiber, film or moulding form.

### Key Properties

General	Typical Value (SI)	Test Method
MFI (190 °C/2.16 Kg)	2 g/10min	ASTM D1238
Density	0.932 g/cm <sup>3</sup>	ASTM D792
Bulk Density	0.54 g/ml	PLUSS <sup>®</sup> method
Bonded Maleic Anhydride	Medium (%)	PLUSS <sup>®</sup> method

Mechanical	Typical Value (SI)	Test Method
Tensile Strength	13 MPa	ASTM D638/2010
Percentage Elongation	385 %	ASTM D638/2010
Tensile Modulus	75 MPa	ASTM D638/2010
Flexural Modulus	315 MPa	ASTM D790/2010
Flexural Strength	11 MPa	ASTM D790/2010

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Hardness	Typical Value (SI)	Test Method
Durometer Hardness		
Shore D	58	ASTM D2240/2004

Thermal	Typical Value (SI)	Test Method
Melting Temperature	125 °C	DSC
Vicat Softening Temperature	112 °C	ASTM 1525/2010

### Storage and Handling Procedures

OPTIM®E-119 is mildly hygroscopic and should be stored in a dry, cool and well-ventilated 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. 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®E-119. 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. At temperatures above 280 °C, these speciality polymers can evolve low concentrations of fumes. If overheated, more extensive decomposition may occur due to exposure of overheated polymers to atmospheric oxygen. Adequate local ventilation should be provided to remove the fumes from the work area.

### Packaging

OPTIM®speciality 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.