

AMPLIFY™ TY 1351

Functional Polymer
The Dow Chemical Company

Message:

AMPLIFY™ TY 1351 Functional Polymer is a maleic anhydride grafted (MAH) polymer. In tie layers for flexible packaging, AMPLIFY TY 1351 Functional Polymer promotes adhesion of Polyethylene to barrier polymers such as polyamide and other polar substrates.

Main Characteristics:

- Excellent adhesion to polyamide
- Excellent physical properties
- Wide range of process and service temperature
- For blown and cast film

Complies with:

- US FDA 21 CFR 175.105
- EU, No 10/2011

Consult the regulations for complete details.

General Information			
Agency Ratings	FDA 21 CFR 175.105		
	Europe No 10/2011		
Forms	Particle		
Physical	Nominal Value	Unit	Test Method
Density	0.923	g/cm ³	ASTM D792
Melt Mass-Flow Rate (MFR) (190°C/2.16 kg)	2.1	g/10 min	ASTM D1238, ISO 1133
MAH Graft Level ¹	Low		Internal method
Films	Nominal Value	Unit	Test Method
Film Puncture Resistance (51 µm)	11.6	J/cm ³	Internal method
secant modulus			ASTM D882
2% secant, MD: 51 µm	209	MPa	ASTM D882
2% secant, TD: 51 µm	229	MPa	ASTM D882
Tensile Strength			ASTM D882
MD: Yield, 51 µm	10.5	MPa	ASTM D882
TD: Yield, 51 µm	11.3	MPa	ASTM D882
MD: Fracture, 51 µm	36.1	MPa	ASTM D882
TD: Fracture, 51 µm	29.2	MPa	ASTM D882
Tensile Elongation			ASTM D882
MD: Fracture, 51 µm	690	%	ASTM D882
TD: Fracture, 51 µm	690	%	ASTM D882
Dart Drop Impact (51 µm)	260	g	ASTM D1709
Elmendorf Tear Strength ²			ASTM D1922
MD : 51 µm	750	g	ASTM D1922
TD : 51 µm	1100	g	ASTM D1922
Thermal	Nominal Value	Unit	Test Method

Vicat Softening Temperature	98.9	°C	ASTM D1525
Melting Temperature (DSC)	123	°C	Internal method
Optical	Nominal Value		Test Method
Gloss (45°, 50.8 µm)	70		ASTM D2457

Extrusion instructions

Recommended Melt Temperature - 400-446°F Fabrication Conditions for Blown Film

Screw Size: 2.5 in. (63.5 mm); 24:1 L/D

Screw Type: Barrier screw

Die Gap: 70 mil (1.8 mm)

Melt Temperature: 430°F (221°C)

Output: 6 lb/hr/in of die circumference

Die diameter: 6 in

Blow-Up Ratio: 2.5:1

Screw Speed: 70 rpm

NOTE

1. Low: 0.5 wt%
2. Method B

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