



AMPLIFY™ TY 2451 Functional Polymer

Product Description AMPLIFY TY 2451 Functional Polymer is a maleic anhydride grafted (MAH) polymer. In tie layers for flexible packaging, AMPLIFY TY 2451 Functional Polymer promotes adhesion of polypropylene to barrier polymers such as polyamide and ethylene vinyl alcohol (EVOH) and other polar substrates.

Main Characteristics:

- Excellent adhesion to polyamide, EVOH, polypropylene homopolymers and copolymers
- Excellent physical properties
- Wide range of service temperature
- For blown film, cast film and blow-molded applications

Complies with:

- 21 CFR 175.105(c)(5)

Consult the regulations for complete details.

Additive • Antiblock: No • Slip: No • Processing Aid: No

Physical	Nominal Value (English)	Nominal Value (SI)	Test Method
Density	0.900 g/cm ³	0.900 g/cm ³	ASTM D792
Melt Index (230°C/2.16 kg)	6.5 g/10 min	6.5 g/10 min	ASTM D1238
MAH Graft Level	Low	Low	Dow Method ¹
Mechanical	Nominal Value (English)	Nominal Value (SI)	Test Method
Tensile Strength			ASTM D638
Yield	4060 psi	28.0 MPa	
Break	3770 psi	26.0 MPa	
Tensile Elongation (Break)	20 %	20 %	ASTM D638
Flexural Modulus - 2% Secant	160000 psi	1100 MPa	ASTM D790
Films	Nominal Value (English)	Nominal Value (SI)	Test Method
Film Thickness - Tested	2.0 mil	51 µm	
Film Puncture Resistance (2.0 mil (51 µm))	110 ft-lb/in ³	9.10 J/cm ³	Dow Method
Secant Modulus			ASTM D882
2% Secant, MD: 2.0 mil (51 µm)	144000 psi	993 MPa	
2% Secant, TD: 2.0 mil (51 µm)	125000 psi	862 MPa	
Tensile Strength			ASTM D882
MD: Yield, 2.0 mil (51 µm)	4700 psi	32.4 MPa	
TD: Yield, 2.0 mil (51 µm)	4050 psi	27.9 MPa	
MD: Break, 2.0 mil (51 µm)	6200 psi	42.7 MPa	
TD: Break, 2.0 mil (51 µm)	3400 psi	23.4 MPa	
Tensile Elongation			ASTM D882
MD: Break, 2.0 mil (51 µm)	610 %	610 %	
TD: Break, 2.0 mil (51 µm)	300 %	300 %	
Dart Drop Impact (2.0 mil (51 µm))	100 g	100 g	ASTM D1709A
Elmendorf Tear Strength			ASTM D1922 ²
MD: 2.0 mil (51 µm)	20 g	20 g	
TD: 2.0 mil (51 µm)	40 g	40 g	
Thermal	Nominal Value (English)	Nominal Value (SI)	Test Method
Vicat Softening Temperature	300 °F	149 °C	ASTM D1525
Melting Temperature (DSC)	320 °F	160 °C	ASTM D4591
Optical	Nominal Value (English)	Nominal Value (SI)	Test Method
Gloss (45°, 2.00 mil (50.8 µm))	32	32	ASTM D2457
Extrusion	Nominal Value (English)	Nominal Value (SI)	
Melt Temperature	430 to 460 °F	221 to 238 °C	

Extrusion Notes

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: 450 °F
- Output: 6 lb/hr/in. of die circumference
- Die Diameter: 6 in.
- Blow-Up Ratio: 2.5:1
- Screw Speed: 70 rpm

Notes

These are typical properties only and are not to be construed as specifications. Users should confirm results by their own tests.

¹ Low: <0.25 wt%, Medium 0.25-0.5, High >0.5 wt%

² Method B

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