

AMPLIFY™ TY 2551

Functional Polymer
The Dow Chemical Company

Message:

AMPLIFY TY 2551 Functional Polymer is a maleic anhydride grafted (MAH) polymer. In tie layers for flexible packaging, AMPLIFY TY 2551 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.

General Information			
Agency Ratings	FDA 21 CFR 175.105		
Forms	Particle		
Physical	Nominal Value	Unit	Test Method
Density	0.896	g/cm ³	ASTM D792
Melt Mass-Flow Rate (MFR) (230°C/2.16 kg)	5.0	g/10 min	ASTM D1238
MAH Graft Level ¹	Low		Internal method
Mechanical	Nominal Value	Unit	Test Method
Tensile Strength			ASTM D638
Yield	23.0	MPa	ASTM D638
Fracture	17.0	MPa	ASTM D638
Tensile Elongation (Break)	60	%	ASTM D638
Flexural Modulus - 2% Secant	758	MPa	ASTM D790
Films	Nominal Value	Unit	Test Method
Film Thickness - Tested	51	µm	
Film Puncture Resistance (51 µm)	7.03	J/cm ³	Internal method
secant modulus			ASTM D882
2% secant, MD: 51 µm	758	MPa	ASTM D882
2% secant, TD: 51 µm	703	MPa	ASTM D882
Tensile Strength			ASTM D882
MD: Yield, 51 µm	27.7	MPa	ASTM D882
TD: Yield, 51 µm	25.0	MPa	ASTM D882
MD: Fracture, 51 µm	34.5	MPa	ASTM D882
TD: Fracture, 51 µm	22.8	MPa	ASTM D882
Tensile Elongation			ASTM D882
MD: Fracture, 51 µm	630	%	ASTM D882
TD: Fracture, 51 µm	520	%	ASTM D882

Dart Drop Impact (51 μm)	100	g	ASTM D1709A
Elmendorf Tear Strength ²			ASTM D1922
MD : 51 μm	20	g	ASTM D1922
TD : 51 μm	40	g	ASTM D1922
Thermal	Nominal Value	Unit	Test Method
Vicat Softening Temperature	129	°C	ASTM D1525
Melting Temperature (DSC)	148	°C	ASTM D4591
Optical	Nominal Value		Test Method
Gloss (45°, 50.8 μm)	35		ASTM D2457
Extrusion	Nominal Value	Unit	
Melt Temperature	221 - 238	°C	

Extrusion instructions

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

NOTE

1. Low: 0.5 wt%
2. Method B

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