

AMPLIFY™ TY 1451

Functional Polymer

The Dow Chemical Company

Message:

AMPLIFY™ TY 1451 Functional Polymer is a maleic anhydride grafted (MAH) polymer. In tie layers for flexible packaging, AMPLIFY TY 1451 Functional Polymer promotes adhesion of Polyethylene to barrier polymers, such as polyamide and ethylene vinyl alcohol (EVOH), and to ionomers and other polar substrates.

Main Characteristics:

Excellent adhesion to polyamide and EVOH, ionomers and polyethylene

Excellent physical properties

Wide range of process and service temperature

For blown and cast film, thermoforming 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	Pellets		
Physical	Nominal Value	Unit	Test Method
Density	0.910	g/cm ³	ASTM D792
Melt Mass-Flow Rate (MFR) (190°C/2.16 kg)	1.7	g/10 min	ASTM D1238
MAH Graft Level ¹	Low		Internal Method
Mechanical	Nominal Value	Unit	Test Method
Tensile Strength			ASTM D638
Yield	9.00	MPa	
Break	8.00	MPa	
Tensile Elongation (Break)	760	%	ASTM D638
Flexural Modulus	186	MPa	ASTM D790
Films	Nominal Value	Unit	Test Method
Film Puncture Resistance (51 µm)	8.27	J/cm ³	Internal Method
Secant Modulus			ASTM D882
2% Secant, MD : 51 µm	225	MPa	
2% Secant, TD : 51 µm	269	MPa	
Tensile Strength			ASTM D882
MD : Yield,51 µm	8.96	MPa	
TD : Yield,51 µm	10.2	MPa	
MD : Break, 51 µm	25.5	MPa	
TD : Break, 51 µm	23.4	MPa	
Tensile Elongation			ASTM D882
MD : Break, 51 µm	800	%	
TD : Break, 51 µm	900	%	
Dart Drop Impact (51 µm)	140	g	ASTM D1709

Elmendorf Tear Strength			ASTM D1922
MD : 51 μm	360	g	
TD : 51 μm	570	g	
Thermal	Nominal Value	Unit	Test Method
Vicat Softening Temperature	86.0	$^{\circ}\text{C}$	ASTM D1525
Melting Temperature (DSC)	122	$^{\circ}\text{C}$	Internal Method
Optical	Nominal Value		Test Method
Gloss (45°, 50.8 μm)	60		ASTM D2457
NOTE			
1.	Low: 0.5 wt%		

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Susheng Import & Export Trading Co.,Ltd.

Tel: +86 21 5895 8519

Phone: +86 13424755533

Email: sales@su-jiao.com

No. 215, Lianhe North Road, Fengxian District, Shanghai, China

