



AMPLIFY™ TY 1451

The Dow Chemical Company - Functional Polymer

Sunday, November 3, 2019

General Information

Product Description

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

Material Status	• Commercial: Active
Availability	• Asia Pacific • Europe • Latin America • North America
Additive	• Antiblock: No • Processing Aid: No • Slip: No
Agency Ratings	• FDA 21 CFR 175.105
Forms	• Pellets

ASTM & ISO Properties ¹

Physical	Nominal Value	Unit	Test Method
Density	0.910	g/cm ³	ASTM D792
Melt Mass-Flow Rate (190°C/2.16 kg)	1.7	g/10 min	ASTM D1238
MAH Graft Level ²	Low		Internal Method

Mechanical	Nominal Value	Unit	Test Method
Tensile Strength (Yield)	1310	psi	ASTM D638
Tensile Strength (Break)	1160	psi	ASTM D638
Tensile Elongation (Break)	760	%	ASTM D638
Flexural Modulus	27000	psi	ASTM D790

Films	Nominal Value	Unit	Test Method
Film Puncture Resistance (2.0 mil)	100	ft-lb/in ³	Internal Method
Secant Modulus - 2% Secant, MD (2.0 mil)	32600	psi	ASTM D882
Secant Modulus - 2% Secant, TD (2.0 mil)	39000	psi	ASTM D882
Tensile Strength - MD (Yield, 2.0 mil)	1300	psi	ASTM D882
Tensile Strength - TD (Yield, 2.0 mil)	1480	psi	ASTM D882
Tensile Strength - MD (Break, 2.0 mil)	3700	psi	ASTM D882
Tensile Strength - TD (Break, 2.0 mil)	3400	psi	ASTM D882
Tensile Elongation - MD (Break, 2.0 mil)	800	%	ASTM D882
Tensile Elongation - TD (Break, 2.0 mil)	900	%	ASTM D882
Dart Drop Impact (2.0 mil)	140	g	ASTM D1709
Elmendorf Tear Strength - MD (2.0 mil)	360	g	ASTM D1922

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Films	Nominal Value	Unit	Test Method
Elmendorf Tear Strength - TD (2.0 mil)	570	g	ASTM D1922
Thermal	Nominal Value	Unit	Test Method
Vicat Softening Temperature	187	°F	ASTM D1525
Melting Temperature (DSC)	252	°F	Internal Method
Optical	Nominal Value	Unit	Test Method
Gloss (45°, 2.00 mil)	60		ASTM D2457

Notes

¹ Typical properties: these are not to be construed as specifications.

² Low: <0.25 wt%, Medium 0.25-0.5, High >0.5 wt%