



AMPLIFY™ TY 1351

The Dow Chemical Company - Functional Polymer

Sunday, November 3, 2019

General Information

Product Description

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

Material Status	• Commercial: Active		
Availability	• Asia Pacific • Europe	• Latin America • North America	
Additive	• Antiblock: No	• Processing Aid: No	• Slip: No
Agency Ratings	• EU No 10/2011	• FDA 21 CFR 175.105	
Forms	• Pellets		

ASTM & ISO Properties ¹

Physical	Nominal Value	Unit	Test Method
Density	0.923	g/cm ³	ASTM D792
Melt Mass-Flow Rate (190°C/2.16 kg)	2.1	g/10 min	ASTM D1238
Melt Mass-Flow Rate (MFR) (190°C/2.16 kg)	2.1	g/10 min	ISO 1133
MAH Graft Level ²	Low		Internal Method
Films	Nominal Value	Unit	Test Method
Film Puncture Resistance (2.0 mil)	140	ft·lb/in ³	Internal Method
Secant Modulus - 2% Secant, MD (2.0 mil)	30300	psi	ASTM D882
Secant Modulus - 2% Secant, TD (2.0 mil)	33200	psi	ASTM D882
Tensile Strength - MD (Yield, 2.0 mil)	1530	psi	ASTM D882
Tensile Strength - TD (Yield, 2.0 mil)	1640	psi	ASTM D882
Tensile Strength - MD (Break, 2.0 mil)	5240	psi	ASTM D882
Tensile Strength - TD (Break, 2.0 mil)	4240	psi	ASTM D882
Tensile Elongation - MD (Break, 2.0 mil)	690	%	ASTM D882
Tensile Elongation - TD (Break, 2.0 mil)	690	%	ASTM D882
Dart Drop Impact (2.0 mil)	260	g	ASTM D1709
Elmendorf Tear Strength - MD ³ (2.0 mil)	750	g	ASTM D1922
Elmendorf Tear Strength - TD ³ (2.0 mil)	1100	g	ASTM D1922
Thermal	Nominal Value	Unit	Test Method
Vicat Softening Temperature	210	°F	ASTM D1525
Melting Temperature (DSC)	253	°F	Internal Method

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Optical	Nominal Value	Unit	Test Method
Gloss (45°, 2.00 mil)	70		ASTM D2457

Processing Information

Extrusion Notes

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

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%

³ Method B