AMPLIFY™ TY 1451
Functional Polymer

Overview

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.

Additive

- Antiblock: No
- Slip: No
- Processing Aid: No

Physical	Nominal Value	(English)	Nominal Value	(SI)	Test Method
Density	0.910	g/cm³	0.910	g/cm³	ASTM D792
Melt Index (190°C/2.16 kg)	1.7	g/10 min	1.7	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	1310	psi	9.00	MPa	
Break	1160	psi	8.00	MPa	
Tensile Elongation (Break)	760	%	760	%	ASTM D638
Flexural Modulus	27000	psi	186	MPa	ASTM D790
Films	**Nominal Value**	**(English)**	**Nominal Value**	**(SI)**	**Test Method**
Film Puncture Resistance (2.0 mil (51 µm))	100	ft·lb/in³	8.27	J/cm³	Dow Method
Secant Modulus					ASTM D882
2% Secant, MD: 2.0 mil (51 µm)	32600	psi	225	MPa	
2% Secant, TD: 2.0 mil (51 µm)	39000	psi	269	MPa	
Tensile Strength					ASTM D882
MD: Yield, 2.0 mil (51 µm)	1300	psi	8.96	MPa	
TD: Yield, 2.0 mil (51 µm)	1480	psi	10.2	MPa	
MD: Break, 2.0 mil (51 µm)	3700	psi	25.5	MPa	
TD: Break, 2.0 mil (51 µm)	3400	psi	23.4	MPa	
Tensile Elongation					ASTM D882
MD: Break, 2.0 mil (51 µm)	800	%	800	%	
TD: Break, 2.0 mil (51 µm)	900	%	900	%	
Dart Drop Impact (2.0 mil (51 µm))	140	g	140	g	ASTM D1709
Elmendorf Tear Strength					ASTM D1922
MD: 2.0 mil (51 µm)	360	g	360	g	
TD: 2.0 mil (51 µm)	570	g	570	g	
Thermal	**Nominal Value**	**(English)**	**Nominal Value**	**(SI)**	**Test Method**
Vicat Softening Temperature	187	°F	86.0	°C	ASTM D1525
Melting Temperature (DSC)	252	°F	122	°C	Dow Method
Optical	**Nominal Value**	**(English)**	**Nominal Value**	**(SI)**	**Test Method**
Gloss (45°, 2.00 mil (50.8 µm))	60		60		ASTM D2457

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%

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Additional Information

North America		**Europe/Middle East**	+800-3694-6367
U.S. & Canada:	1-800-441-4369		+31-11567-2626
	1-989-832-1426	Italy:	+800-783-825
Mexico:	+1-800-441-4369		
Latin America		**South Africa**	+800-99-5078
Argentina:	+54-11-4319-0100		
Brazil:	+55-11-5188-9000		
Colombia:	+57-1-219-6000	**Asia Pacific**	+800-7776-7776
Mexico:	+52-55-5201-4700		+603-7965-5392

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