



AFFINITY™ PL 1850G Polyolefin Plastomer

Overview AFFINITY* PL 1850G Polyolefin Plastomer (POP) is produced via INSITE* Technology. It is designed to provide blown and cast film products with low temperature sealability, excellent optics and good abuse resistance. It has value as a sealant layer in multilayer film structures for dry and liquid packaging.

- High performance sealant layer in flexible packaging
- Excellent optics, low temperature seal initiation and abuse resistance

Complies with:

- U.S. FDA FCN 424
- Canadian HPFB No Objectin
- Europe EU-Directive 2002/72/EC

Consult the regulations for complete details.

Physical	Nominal Value (English)	Nominal Value (SI)	Test Method
Density	0.902 g/cm ³	0.902 g/cm ³	ASTM D792
Melt Index (190°C/2.16 kg)	3.0 g/10 min	3.0 g/10 min	ASTM D1238
Films	Nominal Value (English)	Nominal Value (SI)	Test Method
Film Thickness - Tested	0.800 mil	20.3 µm	
Film Puncture Energy (0.800 mil (20.3 µm))	37.9 in-lb	4.28 J	Dow Method
Film Puncture Force (0.800 mil (20.3 µm))	10.7 lbf	47.6 N	Dow Method
Film Puncture Resistance 0.800 mil (20.3 µm)	380 ft-lb/in ³	31.4 J/cm ³	Dow Method
Secant Modulus			ASTM D882
2% Secant, MD: 0.800 mil (20.3 µm)	15700 psi	108 MPa	
2% Secant, TD: 0.800 mil (20.3 µm)	16600 psi	115 MPa	
Tensile Strength			ASTM D882
MD: Yield, 0.800 mil (20.3 µm)	1440 psi	9.93 MPa	
TD: Yield, 0.800 mil (20.3 µm)	790 psi	5.45 MPa	
MD: Break, 0.800 mil (20.3 µm)	6470 psi	44.6 MPa	
TD: Break, 0.800 mil (20.3 µm)	4320 psi	29.8 MPa	
Tensile Elongation			ASTM D882
MD: Break, 0.800 mil (20.3 µm)	350 %	350 %	
TD: Break, 0.800 mil (20.3 µm)	570 %	570 %	
Dart Drop Impact (0.800 mil (20.3 µm))	> 830 g	> 830 g	ASTM D1709B
Elmendorf Tear Strength			ASTM D1922 ¹
MD: 0.800 mil (20.3 µm)	120 g	120 g	
TD: 0.800 mil (20.3 µm)	410 g	410 g	
Seal Initiation Temperature 0.800 mil (20.3 µm)	201 °F	93.9 °C	Dow Method ²
Thermal	Nominal Value (English)	Nominal Value (SI)	Test Method
Vicat Softening Temperature	185 °F	85.0 °C	ASTM D1525
Melting Temperature (DSC)	208 °F	97.8 °C	Dow Method
Optical	Nominal Value (English)	Nominal Value (SI)	Test Method
Gloss (20°, 0.800 mil (20.3 µm))	144	144	ASTM D2457
Haze (0.800 mil (20.3 µm))	0.70 %	0.70 %	ASTM D1003
Extrusion	Nominal Value (English)	Nominal Value (SI)	
Melt Temperature	525 °F	274 °C	

Extrusion Notes

Fabrication Conditions For Cast Film:

- Screw Size: 3.5 in. (89 mm); 32:1 L/D
 - Screw Speed: 10 rpm
- Screw Size: 2.5 in. (63.5 mm); 24:1 L/D
 - Screw Speed: 27 rpm
- Screw Size: 2.0 in. (51 mm); 24:1 L/D
 - Screw Speed: 46 rpm
- Screw Type: Sterlex, Single Flight with Maddock Mixer & Single Flight
- Die Gap: 20 mil (0.5 mm)
- Chill Roll Temperature: 70°F (21°C)
- Melt Temperature: 525°F (274°C)
- Output: 243 lb/hr
- Line Speed: 600 fpm (183 m/min)

Notes

These are typical properties only and are not to be construed as specifications. Users should confirm results by their own tests.

¹ Modified rectangular test specimen.

² Temperature at which 1 lb/in. (4.4 N/25.4 mm) heat seal strength is achieved.

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