



Technical Data Sheet

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.

Sustainability Attribute:



- 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 Objection
- EU, No 10/2011

Consult the regulations for complete details.

Additive

- Antiblock: No
- Slip: No
- Processing aid: No

Physical Properties

Physical	Nominal Value	Unit (English)	Nominal Value	Unit (SI)	Test Method ¹
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					
Film Thickness - Tested	1	mil	20	µm	
Film Puncture Energy (0.80 mil (20 µm))	37.9	in·lb	4.28	J	Dow Method
Film Puncture Force (0.80 mil (20 µm))	10.7	lbf	47.6	N	Dow Method
Film Puncture Resistance (0.80 mil (20 µm))	380	ft·lb/in ³	31.4	J/cm ³	Dow Method

1. ASTM: American Society for Testing and Materials

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

Physical Properties (Cont.)

Films	Nominal Value	Unit (English)	Nominal Value	Unit (SI)	Test Method
Secant Modulus					ASTM D882
2% Secant, MD: 0.80 mil (20 µm)	15700	psi	108	MPa	
2% Secant, TD: 0.80 mil (20 µm)	16600	psi	115	MPa	
Tensile Strength					ASTM D882
MD : Yield, 0.80 mil (20 µm)	1440	psi	9.93	MPa	
TD : Yield, 0.80 mil (20 µm)	790	psi	5.45	MPa	
MD : Break, 0.80 mil (20 µm)	6470	psi	44.6	MPa	
TD : Break, 0.80 mil (20 µm)	4320	psi	29.8	MPa	
Tensile Elongation					ASTM D882
MD : Break, 0.80 mil (20 µm)	350	%	350	%	
TD : Break, 0.80 mil (20 µm)	570	%	570	%	
Dart Drop Impact (0.80 mil (20 µm))	> 830	g	> 830	g	ASTM D1709B
Elmendorf Tear Strength ²					ASTM D1922
MD : 0.80 mil (20 µm)	120	g	120	g	
TD : 0.80 mil (20 µm)	410	g	410	g	
Seal Initiation Temperature ³					Dow Method
0.80 mil (20 µm)	201	°F	93.9	°C	
Thermal					
Vicat Softening Temperature	185	°F	85.0	°C	ASTM D1525
Melting Temperature (DSC)	208	°F	98.0	°C	Dow Method
Optical					
Gloss (20°, 0.800 mil (20.3 µm))	144		144		ASTM D2457
Haze (0.800 mil (20.3 µm))	0.700	%	0.700	%	ASTM D1003
Extrusion					
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)					

2. Modified rectangular test specimen.

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

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