



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



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.

