Technical Data Sheet

AFFINITY™ PL 1880G Polyolefin Plastomer

Description

AFFINITY™ PL 1880G Polyolefin Plastomer (POP) is produced via INSITE™ Technology. It is an ethylene alpha-olefin resin designed for use in a variety of demanding packaging applications, including high-speed, form-fill-seal packaging. This resin offers excellent ultimate hot tack strength and low temperature seal initiation, even through contamination in the package.

Sustainability Attribute:

Circulibrium
Designing for circularity with Dow

Typical Applications

- Low seal initiation temperature
- Excellent hot tack strength
- High performance sealant layer in flexible packaging

Complies with

- U.S. FDA FCN 424
- U.S. FDA-DMF
- U.S. USP 23
- HPFB No Objection (with limitations)
- EU, No 10/2011
- Japan Hygienic Olefin and Styrene Plastics Association

Consult the regulations for complete details.

Additive

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

Properties[1]

Physical	Nominal Value	Unit (English)	Nominal Value	Unit (SI)	Test Method[2]
Density	0.902	g/cm^3	0.902	g/cm^3	ASTM D792
Melt Index (190°C/2.16 kg)	1.0	g/10 min	1.0	g/10 min	ASTM D1238
Films					
Film Thickness - Tested	2.0	mil	51	µm	
Film Puncture Energy (2.0 mil (51 µm))	78.0	in·lb	8.81	J	Internal Method
Film Puncture Force (2.0 mil (51 µm))	20.8	lbf	92.5	N	Internal Method
Film Puncture Resistance (2.0 mil (51 µm))	270	ft·lb/in^3	22.3	J/cm^3	Internal Method
Secant Modulus					ASTM D882
2% Secant, MD: 2.0 mil (51 µm)	13300	psi	91.7	MPa	
2% Secant, TD: 2.0 mil (51 µm)	13400	psi	92.4	MPa	

1. Typical properties: these are not to be construed as specifications. Users should confirm results by their own tests.
2. ASTM: American Society for Testing and Materials

Properties (Cont.)

Films	Nominal Value	Unit (English)	Nominal Value	Unit (SI)	Test Method
Tensile Strength					ASTM D882
MD: Yield, 2.0 mil (51 µm)	1050	psi	7.24	MPa	
TD: Yield, 2.0 mil (51 µm)	1000	psi	6.89	MPa	
MD: Break, 2.0 mil (51 µm)	8500	psi	58.6	MPa	
TD: Break, 2.0 mil (51 µm)	6480	psi	44.7	MPa	
Tensile Elongation					ASTM D882
MD: Break, 2.0 mil (51 µm)	620	%	620	%	
TD: Break, 2.0 mil (51 µm)	630	%	630	%	
Dart Drop Impact (2.0 mil (51 µm))	> 830	g	> 830	g	ASTM D1709B
Elmendorf Tear Strength[3]					ASTM D1922
MD: 2.0 mil (51 µm)	550	g	550	g	
TD: 2.0 mil (51 µm)	720	g	720	g	
Seal Initiation Temperature[4] (2.0 mil (51 µm))	185	°F	85.0	°C	Internal Method
Thermal					
Vicat Softening Temperature	187	°F	86.0	°C	ASTM D1525
Melting Temperature (DSC)	210	°F	99.0	°C	Internal Method
Optical					
Gloss (20°, 2.00 mil (50.8 µm))	141		141		ASTM D2457
Clarity (2.00 mil (50.8 µm))	83.0		83.0		ASTM D1746
Haze (2.00 mil (50.8 µm))	1.10	%	1.10	%	ASTM D1003
Extrusion					
Melt Temperature	408	°F	209	°C	
Extrusion Notes					

Fabrication Conditions for Blown Film:

- Screw Size: 2.5 in. (63.5 mm); 24:1 L/D
- Screw Type: SFDM
- Die Gap: 70 mil (1.8 mm)
- Melt Temperature: 408°F (209°C)
- Output: 6 lb/hr/in. of die circumference
- Die Diameter: 6 in.
- Blow-Up Ratio: 2.5:1
- Screw Speed: 50 rpm

3. Modified rectangular test specimen.
4. Temperature at which 2 lb/in. (8.8 N/25.4 mm) heat seal strength is achieved.
Heat Seal Strengths, Topwave HT Tester 0.5 S dwell, 40 psi bar pressure, pill speed 10 in./min (250 mm/sec).

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