AFFINITY™ PL 1881G

The Dow Chemical Company - Polyolefin Plastomer

Monday, November 4, 2019

General Information

Product Description

AFFINITY* PL 1881G Polyolefin Plastomer (POP) is produced via INSITE* Technology. It is designed for a variety of demanding packaging applications, including high-speed form-fill-seal products.

- Excellent ultimate hot tack strength
- Low temperature sealability
- Ability to seal through contamination
- Outstanding optics

Complies with:

- U.S. FDA FCN 424
- Canadian HPFB No Objection (with limitations)
- EU, No 10/2011

Consult the regulations for complete details.

General			
Material Status	• Commercial: Active		
Availability	• Asia Pacific • Europe	• Latin America • North America	
Additive	• Antiblock: 2500 ppm	• Slip: 750 ppm	
Agency Ratings	• EU No 10/2011	• FDA FCN 424	• HPFB (Canada) No Objection
Forms	• Pellets		
Processing Method	• Blown Film		

ASTM & ISO Properties [1]

Physical	Nominal Value	Unit	Test Method
Density / Specific Gravity	0.906		ASTM D792
Melt Mass-Flow Rate (190°C/2.16 kg)	1.0	g/10 min	ASTM D1238
Mechanical	**Nominal Value**	**Unit**	**Test Method**
Coefficient of Friction (vs. Itself - Dynamic)	0.15		ASTM D1894
Films	**Nominal Value**	**Unit**	**Test Method**
Film Thickness - Tested	2	mil	
Film Puncture Energy (2.0 mil)	71.6	in·lb	Internal Method
Film Puncture Force (2.0 mil)	18.5	lbf	Internal Method
Film Puncture Resistance (2.0 mil)	265	ft·lb/in³	Internal Method
Secant Modulus - 2% Secant, MD (2.0 mil)	14100	psi	ASTM D882
Secant Modulus - 2% Secant, TD (2.0 mil)	14100	psi	ASTM D882
Tensile Strength - MD (Yield, 2.0 mil)	1170	psi	ASTM D882
Tensile Strength - TD (Yield, 2.0 mil)	1040	psi	ASTM D882
Tensile Strength - MD (Break, 2.0 mil)	6580	psi	ASTM D882
Tensile Strength - TD (Break, 2.0 mil)	6170	psi	ASTM D882
Tensile Elongation - MD (Break, 2.0 mil)	590	%	ASTM D882
Tensile Elongation - TD (Break, 2.0 mil)	630	%	ASTM D882
Dart Drop Impact (2.0 mil)	> 830	g	ASTM D1709B
Elmendorf Tear Strength - MD [2] (2.0 mil)	560	g	ASTM D1922

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Films	Nominal Value	Unit	Test Method
Elmendorf Tear Strength - TD [2] (2.0 mil)	730	g	ASTM D1922
Seal Initiation Temperature [3] (2.0 mil)	185	°F	Internal Method
Block Force	70	g	ASTM D3354-89
Thermal	**Nominal Value**	**Unit**	**Test Method**
Vicat Softening Temperature	187	°F	ASTM D1525
Melting Temperature (DSC)	212	°F	Internal Method
Optical	**Nominal Value**	**Unit**	**Test Method**
Gloss (20°, 2.00 mil)	112		ASTM D2457
Clarity (2.00 mil)	83.0		ASTM D1746
Haze (2.00 mil)	3.20	%	ASTM D1003

Processing Information

Extrusion	Nominal Value	Unit
Melt Temperature	430	°F

Extrusion Notes

Fabrication Conditions For Blown Film:

- Screw Size: 2.5 in. (63.5 mm); 24:1 L/D
- Screw Type: DSB II
- Die Gap: 70 mil (1.8 mm)
- Melt Temperature: 430°F (221°C)
- Output: 6 lb/hr/in. of die circumference
- Die Diameter: 6 in.
- Blow-Up Ratio: 2.5:1
- Screw Speed: 40 rpm

Notes

[1] Typical properties: these are not to be construed as specifications.

[2] Modified rectangular test specimen.

[3] 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, pull speed 10 in./min (250 mm/sec).