AFFINITY™ PL 1840G

The Dow Chemical Company - Polyolefin Plastomer

Monday, November 4, 2019

General Information

Product Description

AFFINITY* PL 1840G Polyolefin Plastomer (POP) is produced via INSITE* Technology. It is an ethylene alpha-olefin resin designed to provide blown film with low temperature sealability, good puncture resistance, optics and organoleptic properties. It also has excellent compatibility with other polyolefins, allowing efficient blending and coextrusion.

- Outstanding low temperature sealability and toughness
- Suitable as a sealant in liquid & dry food pouch applications

Applications:

- Blown Film

Complies with:

- Canadian HPFP No Objection
- EU, No 10/2011
- U.S. FDA FCN 424
- U.S. FDA-DMF

Consult the regulations for complete details.

General			
Material Status	• Commercial: Active		
Availability	• Asia Pacific	• Europe	• North America
Additive	• Antiblock: No	• Processing Aid: No	• Slip: No
Agency Ratings	• DMF Unspecified Rating • 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	0.911		ASTM D792
Melt Mass-Flow Rate (190°C/2.16 kg)	1.0	g/10 min	ASTM D1238
Films	**Nominal Value**	**Unit**	**Test Method**
Film Thickness - Tested	2	mil	
Film Puncture Energy (2.0 mil)	81.1	in·lb	Internal Method
Film Puncture Force (2.0 mil)	20.9	lbf	Internal Method
Film Puncture Resistance (2.0 mil)	304	ft·lb/in³	Internal Method
Secant Modulus - 2% Secant, MD (2.0 mil)	17800	psi	ASTM D882
Secant Modulus - 2% Secant, TD (2.0 mil)	17900	psi	ASTM D882
Tensile Strength - MD (Yield, 2.0 mil)	1270	psi	ASTM D882
Tensile Strength - TD (Yield, 2.0 mil)	1170	psi	ASTM D882
Tensile Strength - MD (Break, 2.0 mil)	6930	psi	ASTM D882
Tensile Strength - TD (Break, 2.0 mil)	6580	psi	ASTM D882
Tensile Elongation - MD (Break, 2.0 mil)	620	%	ASTM D882
Tensile Elongation - TD (Break, 2.0 mil)	580	%	ASTM D882
Dart Drop Impact (2.0 mil)	> 830	g	ASTM D1709B

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Films	Nominal Value	Unit	Test Method
Elmendorf Tear Strength - MD [2] (2.0 mil)	560	g	ASTM D1922
Elmendorf Tear Strength - TD [2] (2.0 mil)	840	g	ASTM D1922
Seal Initiation Temperature [3] (2.0 mil)	199	°F	Internal Method
Thermal	**Nominal Value**	**Unit**	**Test Method**
Vicat Softening Temperature	203	°F	ASTM D1525
Melting Temperature (DSC)	222	°F	Internal Method
Optical	**Nominal Value**	**Unit**	**Test Method**
Gloss (20°, 2.00 mil)	128		ASTM D2457
Clarity (2.00 mil)	63.0		ASTM D1746
Haze (2.00 mil)	2.50	%	ASTM D1003

Processing Information

Extrusion	Nominal Value	Unit
Melt Temperature	429	°F

Extrusion Notes

Fabrication Conditions For Blown Film:

- Screw Size: 2.5 in. (63.5 mm); 24:1 L/D
- Screw Type: DSB11
- Die Gap: 70 mil (1.8 mm)
- Melt Temperature: 429°F (220°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).