

Technical Information



DOW™ LLDPE 1647C

Linear Low Density Polyethylene Resin

Overview DOW™ LLDPE 1647C linear low density polyethylene is an ethylene-alpha olefin copolymer designed for blown film applications.

Main Characteristics:

- Blown film extrusion
- Pellet form

Complies with:

- U.S. FDA, 21 CFR 177.1520(c)3.2a
- Canadian HPFB No Objection
- EU, No 10/2011
- Consult the regulations for complete details.

Additive • Antiblock: No • Slip: No • Processing Aid: No

Physical	Nominal Value (English)	Nominal Value (SI)	Test Method
Density	0.924 g/cm ³	0.924 g/cm ³	ASTM D792
Base Density ¹	0.924 g/cm ³	0.924 g/cm ³	Dow Method
Melt Index (190°C/2.16 kg)	1.3 g/10 min	1.3 g/10 min	ASTM D1238
Films	Nominal Value (English)	Nominal Value (SI)	Test Method
Film Thickness - Tested	1.0 mil	25 µm	
Film Toughness			ASTM D882
MD	1180 ft·lb/in ³	97.2 J/cm ³	
TD	1210 ft·lb/in ³	100 J/cm ³	
Secant Modulus			ASTM D882
1% Secant, MD	40100 psi	276 MPa	
2% Secant, MD	34500 psi	238 MPa	
1% Secant, TD	48100 psi	332 MPa	
2% Secant, TD	39800 psi	274 MPa	
Tensile Strength			ASTM D882
MD : Yield	1180 psi	8.10 MPa	
TD : Yield	1930 psi	13.3 MPa	
MD : Break	6210 psi	42.8 MPa	
TD : Break	4590 psi	31.6 MPa	
Tensile Elongation			ASTM D882
MD : Break	470 %	470 %	
TD : Break	620 %	620 %	
Dart Drop Impact	100 g	100 g	ASTM D1709A
Elmendorf Tear Strength ²			ASTM D1922
MD	220 g	220 g	
TD	540 g	540 g	
Thermal	Nominal Value (English)	Nominal Value (SI)	Test Method
Vicat Softening Temperature			
--	228 °F	109 °C	ASTM D1525
--	102 °F	38.9 °C	ISO 306
Melting Temperature (DSC)	252 °F	122 °C	ISO 3146
Optical	Nominal Value (English)	Nominal Value (SI)	Test Method
Gloss (45°)	24	24	ASTM D2457
Haze	26 %	26 %	ASTM D1003

Extrusion	Nominal Value (English)	Nominal Value (SI)
Melt Temperature	410 °F	210 °C

Extrusion Notes

Fabrication Conditions For Blown Film:

- Screw Size: 3.5in.; 30:1ratio L/D
- Screw Type: DSB II
- Die Gap: 70mil (1.8 mm)
- Melt Temperature: 410°F
- Output: 10 lb/hr/in. of die circumference
- Die Diameter: 8 in.
- Blow-Up Ratio: 2.5 to 1
- Screw Speed: 45.2 rpm
- Frost Line Height: 42 in.

Notes

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

¹ Base density is estimated using the assumption that every 1000 ppm of antiblock in the finished product raises the density of the polymer by 0.0006 g/cm³. Base density is the estimated density of the polymer if it did not contain any antiblock.

² Method B

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Published: 2011-11-08

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