

## Technical Information



# DOW™ LLDPE 1659C

## Linear Low Density Polyethylene Resin

### Overview

DOW™ LLDPE 1659C linear low density polyethylene is an ethylene-alpha olefin copolymer designed for cast film applications.

#### Main Characteristics:

- Cast film extrusion
- Pellet form

#### Complies with:

- U.S. FDA, 21 CFR 177.1520(c)3.2a
- Canadian HPFB No Objection
- Europe Commission Regulation (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	0.920 g/cm <sup>3</sup>	0.920 g/cm <sup>3</sup>	ASTM D792
Base Density <sup>1</sup>	0.920 g/cm <sup>3</sup>	0.920 g/cm <sup>3</sup>	Dow Method
Melt Index (190°C/2.16 kg)	2.4 g/10 min	2.4 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	1020 ft-lb/in <sup>3</sup>	84.4 J/cm <sup>3</sup>	
TD	1250 ft-lb/in <sup>3</sup>	103 J/cm <sup>3</sup>	
Secant Modulus			ASTM D882
1% Secant, MD	23400 psi	161 MPa	
2% Secant, MD	21300 psi	147 MPa	
1% Secant, TD	22500 psi	155 MPa	
2% Secant, TD	19300 psi	133 MPa	
Tensile Strength			ASTM D882
MD : Yield	1320 psi	9.10 MPa	
TD : Yield	1310 psi	9.03 MPa	
MD : Break	6050 psi	41.7 MPa	
TD : Break	4630 psi	31.9 MPa	
Tensile Elongation			ASTM D882
MD : Break	480 %	480 %	
TD : Break	430 %	430 %	
Dart Drop Impact	160 g	160 g	ASTM D1709
Elmendorf Tear Strength <sup>4</sup>			ASTM D1922
MD	310 g	310 g	
TD	430 g	430 g	
Thermal	Nominal Value (English)	Nominal Value (SI)	Test Method
Melting Temperature (DSC)	243 °F	117 °C	Dow Method
Optical	Nominal Value (English)	Nominal Value (SI)	Test Method
Gloss (45°)	94	94	ASTM D2457
Haze	1.0 %	1.0 %	ASTM D1003

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**Extrusion Notes**

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## Fabrication Conditions For Cast Film:

- Screw Size: 2 in.; 30:1 ratio L/D
- Screw Type: DSB II
- Die Gap: 0.25 mil
- Melt Temperature: 535°F
- Output: 400 lb/hr
- Die Width: 36 in.
- Screw Speed: 60 rpm

**Notes**

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

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<sup>1</sup> 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/cm<sup>3</sup>. Base density is the estimated density of the polymer if it did not contain any antiblock.

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<sup>2</sup> Method B

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