

## DOW™ LDPE 310E Low Density Polyethylene Resin

### Overview

DOW LDPE 310E is a fractional melt index low density polyethylene resin. DOW LDPE 310E has been specially designed for superior processability on blown film lines leading to significant output improvements. The resin offers additionally excellent draw down. It can be used pure or in blends with LLDPE resins.

#### Applications:

- lamination film, shrink film, and stretch film

#### Main Characteristics:

- Excellent processability and draw down
- Good physical properties in blends with LLDPE
- Can be readily extruded using conventional blown film techniques at melt temperatures between 160 and 195°C

#### Complies with:

- U.S. FDA 21 CFR 177.1520 ( c )2.2
- EU, No 10/2011
- U.S. FDA-DMF
- Canadian HPFB No Objection

Consult the regulations for complete details.

Slip Additive: 0 ppm

Antiblock Additive: 0 ppm

Physical	Nominal Value (English)	Nominal Value (SI)	Test Method
Density	0.923 g/cm <sup>3</sup>	0.923 g/cm <sup>3</sup>	ASTM D792
Melt Index (190°C/2.16 kg)	0.75 g/10 min	0.75 g/10 min	ASTM D1238
Mechanical	Nominal Value (English)	Nominal Value (SI)	Test Method
Coefficient of Friction	0.50 to 0.70	0.50 to 0.70	ASTM D1894
Films	Nominal Value (English)	Nominal Value (SI)	Test Method
Film Thickness - Tested	2 mil	50 µm	
Film Puncture Energy (2.0 mil (50 µm))	15.9 in·lb	1.80 J	Dow Method
Film Puncture Force (2.0 mil (50 µm))	11.2 lbf	50.0 N	Dow Method
Film Puncture Resistance (2.0 mil (50 µm))	48.3 ft·lb/in <sup>3</sup>	4.00 J/cm <sup>3</sup>	Dow Method
Secant Modulus			ASTM D882
2% Secant, MD : 2.0 mil (50 µm), Blown Film	25400 psi	175 MPa	
2% Secant, TD : 2.0 mil (50 µm), Blown Film	26800 psi	185 MPa	
Tensile Strength			ASTM D882
MD : Yield, 2.0 mil (50 µm), Blown Film	1600 psi	11.0 MPa	
TD : Yield, 2.0 mil (50 µm), Blown Film	1600 psi	11.0 MPa	
MD : Break, 2.0 mil (50 µm), Blown Film	3630 psi	25.0 MPa	
TD : Break, 2.0 mil (50 µm), Blown Film	3340 psi	23.0 MPa	
Tensile Elongation			ASTM D882
MD : Break, 2.0 mil (50 µm), Blown Film	390 %	390 %	
TD : Break, 2.0 mil (50 µm), Blown Film	570 %	570 %	
Dart Drop Impact			ASTM D1709A
2.0 mil (50 µm), Blown Film	170 g	170 g	
Elmendorf Tear Strength <sup>1</sup>			ASTM D1922
MD : 2.0 mil (50 µm), Blown Film	350 g	350 g	
TD : 2.0 mil (50 µm), Blown Film	260 g	260 g	
Optical	Nominal Value (English)	Nominal Value (SI)	Test Method
Gloss (45°, 1.97 mil (50.0 µm), Blown Film)	58	58	ASTM D2457

<b>Optical</b>	<b>Nominal Value (English)</b>	<b>Nominal Value (SI)</b>	<b>Test Method</b>
Haze (1.97 mil (50.0 $\mu\text{m}$ ), Blown Film)	9.20 %	9.20 %	ASTM D1003

  

<b>Extrusion</b>	<b>Nominal Value (English)</b>	<b>Nominal Value (SI)</b>
Melt Temperature	320 to 383 °F	160 to 195 °C

**Extrusion Notes**

Fabrication Conditions For Blown Film:

- Screw Type: Universal
- Output: 25 kg/hr
- Die Diameter: 150 mm.
- Blow-Up Ratio: 2.5
- Screw Speed: 77 rpm

**Notes**

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

<sup>1</sup> Method B

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Published: 2008-06-17

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