



# DOWLEX™ 2045G CIR Polyethylene Resin

## Overview

- Linear Low Density Polyethylene
- For heavy duty applications
- Complies with U.S. FDA 21 CFR 177.1520 (c) 3.2a.
- Complies with ISCC PLUS certification for circular plastics
- Canadian HPFB No Objection
- Consult the regulations for complete details.

DOWLEX™ 2045G CIR Polyethylene Resin is designed for the production of a wide variety of industrial and consumer films. Films made from this resin exhibit a combination of excellent toughness and tear resistance. The product also delivers very good processability on conventional LLDPE machinery.

## 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)	1.0 g/10 min	1.0 g/10 min	ASTM D1238
Films	Nominal Value (English)	Nominal Value (SI)	Test Method
Film Thickness - Tested	1.0 mil	25 µm	
Film Puncture Energy	47.0 in·lb	5.31 J	Dow Method
Film Puncture Force	14.0 lbf	62.3 N	Dow Method
Film Puncture Resistance	315 ft·lb/in <sup>3</sup>	26.1 J/cm <sup>3</sup>	Dow Method
Film Toughness			ASTM D882
MD	1430 ft·lb/in <sup>3</sup>	118 J/cm <sup>3</sup>	
TD	1560 ft·lb/in <sup>3</sup>	129 J/cm <sup>3</sup>	
Secant Modulus			ASTM D882
1% Secant, MD	34400 psi	237 MPa	
2% Secant, MD	29800 psi	205 MPa	
1% Secant, TD	39900 psi	275 MPa	
2% Secant, TD	33600 psi	232 MPa	
Tensile Strength			ASTM D882
MD : Yield	1650 psi	11.3 MPa	
TD : Yield	1730 psi	11.9 MPa	
MD : Break	6870 psi	47.4 MPa	
TD : Break	5890 psi	40.6 MPa	
Tensile Elongation			ASTM D882
MD : Break	600 %	600 %	
TD : Break	740 %	740 %	
Dart Drop Impact	220 g	220 g	ASTM D1709A
Elmendorf Tear Strength <sup>2</sup>			ASTM D1922
MD	370 g	370 g	
TD	630 g	630 g	
Thermal	Nominal Value (English)	Nominal Value (SI)	Test Method
Vicat Softening Temperature	223 °F	106 °C	ASTM D1525
Melting Temperature (DSC)	246 °F	119 °C	Dow Method
Optical	Nominal Value (English)	Nominal Value (SI)	Test Method
Gloss	60	60	ASTM D2457
Haze	10.0 %	10.0 %	ASTM D1003



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**Extrusion Notes**

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## Fabrication Conditions For Blown Film:

- Screw Size: 3.5 in.; 30:1 L/D
- Screw Type: DSB II
- Die Gap: 70 mil (1.8 mm)
- Melt Temperature: 418°F
- Output: 12 lb/hr/in. of die circumference
- Die Diameter: 8 in.
- Blow-Up Ratio: 2.5:1
- Screw Speed: 41 rpm
- Frost Line Height: 43 in.

**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

