



# DOWLEX™ 2049G Polyethylene Resin

## Overview

- Linear Low Density Polyethylene
- Excellent tear strength and medium stiffness
- Outstanding toughness and puncture resistance for films used in food contact applications
- Complies with U.S. FDA 21 CFR 177.1520 (c) 3.1a.
- Consult the regulations for complete details.

Physical	Nominal Value (English)	Nominal Value (SI)	Test Method
Density	0.926 g/cm <sup>3</sup>	0.926 g/cm <sup>3</sup>	ASTM D792
Melt Index	1.0 g/10 min	1.0 g/10 min	ASTM D1238
Films	Nominal Value (English)	Nominal Value (SI)	Test Method
Film Thickness - Tested	1.50 mil	38.1 µm	
Film Puncture Resistance			Dow Method
1.50 mil (38.1 µm)	37.0 ft-lb/in <sup>3</sup>	3.06 J/cm <sup>3</sup>	
Film Toughness			ASTM D882
MD: 1.50 mil (38.1 µm)	1550 ft-lb/in <sup>3</sup>	128 J/cm <sup>3</sup>	
TD: 1.50 mil (38.1 µm)	1690 ft-lb/in <sup>3</sup>	140 J/cm <sup>3</sup>	
Secant Modulus			ASTM D882
2% Secant, MD: 1.50 mil (38.1 µm)	34100 psi	235 MPa	
2% Secant, TD: 1.50 mil (38.1 µm)	40800 psi	281 MPa	
Tensile Strength			ASTM D882
MD: Yield, 1.50 mil (38.1 µm)	1920 psi	13.2 MPa	
TD: Yield, 1.50 mil (38.1 µm)	2140 psi	14.7 MPa	
MD: Break, 1.50 mil (38.1 µm)	6930 psi	47.8 MPa	
TD: Break, 1.50 mil (38.1 µm)	6140 psi	42.3 MPa	
Tensile Elongation			ASTM D882
MD: Break, 1.50 mil (38.1 µm)	630 %	630 %	
TD: Break, 1.50 mil (38.1 µm)	740 %	740 %	
Dart Drop Impact (1.00 mil (25.4 µm))	220 g	220 g	ASTM D1709A
Elmendorf Tear Strength			ASTM D1922
MD: 1.50 mil (38.1 µm)	250 g	250 g	
TD: 1.50 mil (38.1 µm)	590 g	590 g	
Thermal	Nominal Value (English)	Nominal Value (SI)	Test Method
Vicat Softening Temperature	234 °F	112 °C	ASTM D1525
Melting Temperature (DSC)	250 °F	121 °C	Dow Method
Optical	Nominal Value (English)	Nominal Value (SI)	Test Method
Gloss (45°, 1.50 mil (38.1 µm))	80	80	ASTM D2457
Haze (1.50 mil (38.1 µm))	9.0 %	9.0 %	ASTM D1003
Extrusion	Nominal Value (English)	Nominal Value (SI)	
Melt Temperature	405 to 420 °F	207 to 216 °C	

## Extrusion Notes

### Fabrication Conditions For Blown Film:

- Screw Size: 2.5 in. (63.5 mm); 24:1 L/D
- Screw Type: MC-4 with Maddock Mixer
- Die Gap: 40 mil (1.0 mm)
- Melt Temperature: 405-420°F (207-216°C)
- Output: 7 lb/hr/in. of die circumference
- Die Diameter: 6 in.
- Blow-Up Ratio: 2.5:1
- Screw Speed: 50 rpm
- Frost Line Height: 16 in. (406 mm)
- Haul Off Speed: 74 fpm (22 m/min)

**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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