



DOWLEX™ 2045 Polyethylene Resin

Overview

- Linear Low Density Polyethylene
- For heavy duty film applications
- Complies with U.S. FDA 21 CFR 177.1520 (c) 3.2a.
- Canadian HPFB No Objection (With Limitations)
- Europe EU-Directive 2002/72/EC
- Consult the regulations for complete details.

Physical	Nominal Value (English)	Nominal Value (SI)	Test Method
Density	0.920 g/cm ³	0.920 g/cm ³	ASTM D792
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 Puncture Resistance			Dow Method
2.00 mil (50.8 µm)	235 ft-lb/in ³	19.4 J/cm ³	
0.800 mil (20.3 µm)	268 ft-lb/in ³	22.2 J/cm ³	
Film Toughness			ASTM D882
MD: 2.00 mil (50.8 µm)	4180 ft-lb/in ³	346 J/cm ³	
MD: 0.800 mil (20.3 µm)	3860 ft-lb/in ³	319 J/cm ³	
TD: 2.00 mil (50.8 µm)	4240 ft-lb/in ³	351 J/cm ³	
TD: 0.800 mil (20.3 µm)	4300 ft-lb/in ³	356 J/cm ³	
Secant Modulus			ASTM D882
2% Secant, MD: 2.00 mil (50.8 µm)	28200 psi	194 MPa	
2% Secant, MD: 0.800 mil (20.3 µm)	30500 psi	210 MPa	
2% Secant, TD: 2.00 mil (50.8 µm)	33700 psi	233 MPa	
2% Secant, TD: 0.800 mil (20.3 µm)	33700 psi	232 MPa	
Tensile Strength			ASTM D882
MD: Yield, 2.00 mil (50.8 µm)	1580 psi	10.9 MPa	
MD: Yield, 0.800 mil (20.3 µm)	1710 psi	11.8 MPa	
TD: Yield, 2.00 mil (50.8 µm)	1780 psi	12.3 MPa	
TD: Yield, 0.800 mil (20.3 µm)	1750 psi	12.1 MPa	
MD: Break, 2.00 mil (50.8 µm)	7990 psi	55.1 MPa	
MD: Break, 0.800 mil (20.3 µm)	9310 psi	64.2 MPa	
TD: Break, 2.00 mil (50.8 µm)	7220 psi	49.8 MPa	
TD: Break, 0.800 mil (20.3 µm)	7650 psi	52.7 MPa	
Tensile Elongation			ASTM D882
MD: Break, 2.00 mil (50.8 µm)	830 %	830 %	
MD: Break, 0.800 mil (20.3 µm)	640 %	640 %	
TD: Break, 2.00 mil (50.8 µm)	890 %	890 %	
TD: Break, 0.800 mil (20.3 µm)	880 %	880 %	
Dart Drop Impact			ASTM D1709A
2.00 mil (50.8 µm)	290 g	290 g	
0.800 mil (20.3 µm)	150 g	150 g	
Elmendorf Tear Strength			ASTM D1922
MD: 2.00 mil (50.8 µm)	900 g	900 g	
MD: 0.800 mil (20.3 µm)	230 g	230 g	
TD: 2.00 mil (50.8 µm)	1200 g	1200 g	
TD: 0.800 mil (20.3 µm)	520 g	520 g	

Thermal	Nominal Value (English)	Nominal Value (SI)	Test Method
Vicat Softening Temperature	226 °F	108 °C	ASTM D1525
Melting Temperature (DSC)	252 °F	122 °C	Dow Method
Optical	Nominal Value (English)	Nominal Value (SI)	Test Method
Gloss			ASTM D2457
45°, 0.800 mil (20.3 µm)	63	63	
45°, 2.00 mil (50.8 µm)	60	60	
Haze			ASTM D1003
2.00 mil (50.8 µm)	10 %	10 %	
0.800 mil (20.3 µm)	9.0 %	9.0 %	

Extrusion Notes

Fabrication Conditions For Blown Film:

- Screw Size: 2.5 in. (63.5 mm); 30:1 L/D
- Screw Type: DSBII
- Die Gap: 70 mil (1.8 mm)
- Melt Temperature: 450°F (232°C)
- Output: 10 lb/hr/in. of die circumference
- Die Diameter: 6 in.
- Blow-Up Ratio: 2.5:1
- Screw Speed: 83 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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Additional Information

North America		Europe/Middle East	+800-3694-6367
U.S. & Canada:	1-800-441-4369		+32-3-450-2240
	1-989-832-1426	Italy:	+800-783-825
Mexico:	+1-800-441-4369		
Latin America		South Africa	+800-99-5078
Argentina:	+54-11-4319-0100		
Brazil:	+55-11-5188-9000		
Colombia:	+57-1-219-6000	Asia Pacific	+800-7776-7776
Mexico:	+52-55-5201-4700		+603-7965-5392

www.dowplastics.com

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