



DOWLEX™ 2045.03

Polyethylene Resin

Overview

DOWLEX™ 2045.03 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.

Main Characteristics:

- Linear Low Density Polyethylene
- Complies with FDA 21 CFR 177.1520(c) 3.2a.
- 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 ³	0.920 g/cm ³	ASTM D792
Base Density ¹	0.920 g/cm ³	0.920 g/cm ³	Dow Method
Melt Index (190°C/2.16 kg)	1.1 g/10 min	1.1 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	42.9 in·lb	4.85 J	
Film Puncture Force	13.1 lbf	58.2 N	
Film Puncture Resistance	284 ft·lb/in ³	23.5 J/cm ³	
Film Toughness			ASTM D882
MD	1150 ft·lb/in ³	95.5 J/cm ³	
TD	5820 ft·lb/in ³	482 J/cm ³	
Secant Modulus			ASTM D882
1% Secant, MD	32300 psi	223 MPa	
2% Secant, MD	28000 psi	193 MPa	
1% Secant, TD	37700 psi	260 MPa	
2% Secant, TD	31700 psi	219 MPa	
Tensile Strength			ASTM D882
MD : Yield	1610 psi	11.1 MPa	
TD : Yield	1660 psi	11.5 MPa	
MD : Break	5700 psi	39.3 MPa	
TD : Break	5820 psi	40.2 MPa	
Tensile Elongation			ASTM D882
MD : Break	530 %	530 %	
TD : Break	740 %	740 %	
Dart Drop Impact	150 g	150 g	ASTM D1709
Elmendorf Tear Strength			ASTM D1922
MD	380 g	380 g	
TD	690 g	690 g	
Thermal	Nominal Value (English)	Nominal Value (SI)	Test Method
Vicat Softening Temperature	220 °F	104 °C	ASTM D1525
Melting Temperature (DSC)	248 °F	120 °C	ISO 3146
Optical	Nominal Value (English)	Nominal Value (SI)	Test Method
Gloss (45°)	36	36	ASTM D2457
Haze	17.6 %	17.6 %	ASTM D1003



Extrusion Notes

Fabrication Conditions For Blown Film:

- Die Size: 8 in.
- Screw Type: DSB II
- Die Gap: 70 mil (1.8 mm)
- Melt Temperature: 436°F
- Output: 12 lb/hr/in. of die circumference
- Die Diameter: 8 in.
- Blow-Up Ratio: 2.5 to 1
- Screw Speed: 41 rpm
- Frost Line Height: 40 in.

Notes

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

¹ 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/cm³. Base density is the estimated density of the polymer if it did not contain any antiblock.

