



DOW™ LDPE 503A

Low Density Polyethylene Resin

Overview

- A slip and Antiblock additive resin for liners, industrial and clarity
- Optimum gauge range: 1.0-3.0 mil
- Complies with U.S. FDA 21 CFR 177.1520(c)2.2.
- Complies with Canadian HPFB No Objection (With Limitations)
- Complies with EU, No 10/2011
- Consult the regulations for complete details.

Additive

- Antiblock: 1200 ppm
- Slip: 750 ppm
- Processing Aid: No

Physical	Nominal Value (English)	Nominal Value (SI)	Test Method
Density	0.923 g/cm ³	0.923 g/cm ³	ASTM D792
Base Density ¹	0.922 g/cm ³	0.922 g/cm ³	Dow Method
Melt Index (190°C/2.16 kg)	1.9 g/10 min	1.9 g/10 min	ASTM D1238
Films	Nominal Value (English)	Nominal Value (SI)	Test Method
Film Thickness - Tested	2 mil	51 µm	
Film Puncture Resistance (2.0 mil (51 µm))	34.0 ft·lb/in ³	2.81 J/cm ³	Dow Method
Film Toughness			ASTM D882
MD : 2.0 mil (51 µm)	2220 ft·lb/in ³	184 J/cm ³	
TD : 2.0 mil (51 µm)	2290 ft·lb/in ³	190 J/cm ³	
Tensile Strength			ASTM D882
MD : Yield, 2.0 mil (51 µm)	1740 psi	12.0 MPa	
TD : Yield, 2.0 mil (51 µm)	1780 psi	12.3 MPa	
MD : Break, 2.0 mil (51 µm)	3600 psi	24.8 MPa	
TD : Break, 2.0 mil (51 µm)	3010 psi	20.8 MPa	
Tensile Elongation			ASTM D882
MD : Break, 2.0 mil (51 µm)	520 %	520 %	
TD : Break, 2.0 mil (51 µm)	720 %	720 %	
Dart Drop Impact (2.0 mil (51 µm))	100 g	100 g	ASTM D1709A
Elmendorf Tear Strength			ASTM D1922
MD : 2.0 mil (51 µm)	560 g	560 g	
TD : 2.0 mil (51 µm)	470 g	470 g	
Thermal	Nominal Value (English)	Nominal Value (SI)	Test Method
Vicat Softening Temperature	198 °F	92.2 °C	ASTM D1525
Melting Temperature (DSC)	232 °F	111 °C	Dow Method
Optical	Nominal Value (English)	Nominal Value (SI)	Test Method
Gloss (45°, 2.00 mil (50.8 µm))	70	70	ASTM D2457
Haze (2.00 mil (50.8 µm))	7.50 %	7.50 %	ASTM D1003
Extrusion	Nominal Value (English)	Nominal Value (SI)	
Melt Temperature	422 °F	217 °C	

Extrusion Notes

Fabrication Conditions For Blown Film:

- Screw Size: 2.5 in. (63.5 mm); 30:1 L/D
- Screw Type: Single Flight Double Mix
- Die Gap: 40 mil (1.02 mm)
- Melt Temperature: 422°F (217°C)
- Output: 10 lb/hr/in. of die circumference
- Die Diameter: 6 in.
- Blow-Up Ratio: 2.5:1
- Screw Speed: 92 rpm
- Frost Line Height: 30 in. (792 mm)

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.

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