



Experimental XUS 59999.18 Enhanced Polyethylene Resin

Overview High stiffness and shrink force resin for high performance shrink films and lamination films.

Main Characteristics

- High shrink force
- Can be used to reduce LDPE content needed for shrink or processability
- Excellent properties for many film applications where processability and stiffness is desired

Complies with:

- U.S. 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	0.935 g/cm ³	0.935 g/cm ³	ASTM D792
Base Density	0.935 g/cm ³	0.935 g/cm ³	Dow Method ¹
Melt Index (190°C/2.16 kg)	0.50 g/10 min	0.50 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 (1.0 mil (25 µm))	12.8 in-lb	1.45 J	Dow Method
Film Puncture Force (1.0 mil (25 µm))	8.37 lbf	37.2 N	Dow Method
Film Puncture Resistance (1.0 mil (25 µm))	78.0 ft-lb/in ³	6.45 J/cm ³	Dow Method
Film Toughness			ASTM D882
MD: 1.0 mil (25 µm)	2270 ft-lb/in ³	188 J/cm ³	
TD: 1.0 mil (25 µm)	2280 ft-lb/in ³	189 J/cm ³	
Secant Modulus			ASTM D882
1% Secant, MD: 1.0 mil (25 µm)	66700 psi	460 MPa	
2% Secant, MD: 1.0 mil (25 µm)	51500 psi	355 MPa	
1% Secant, TD: 1.0 mil (25 µm)	75000 psi	517 MPa	
2% Secant, TD: 1.0 mil (25 µm)	58800 psi	405 MPa	
Tensile Strength			ASTM D882
MD: Yield, 1.0 mil (25 µm)	3020 psi	20.8 MPa	
TD: Yield, 1.0 mil (25 µm)	3300 psi	22.8 MPa	
MD: Break, 1.0 mil (25 µm)	8250 psi	56.9 MPa	
TD: Break, 1.0 mil (25 µm)	6600 psi	45.5 MPa	
Tensile Elongation			ASTM D882
MD: Break, 1.0 mil (25 µm)	610 %	610 %	
TD: Break, 1.0 mil (25 µm)	800 %	800 %	
Dart Drop Impact (1.0 mil (25 µm))	57 g	57 g	ASTM D1709A
Elmendorf Tear Strength			ASTM D1922 ²
MD: 1.0 mil (25 µm)	29 g	29 g	
TD: 1.0 mil (25 µm)	460 g	460 g	
Thermal	Nominal Value (English)	Nominal Value (SI)	Test Method
Vicat Softening Temperature	254 °F	124 °C	ASTM D1525
Melting Temperature (DSC)	257 °F	125 °C	Dow Method
Optical	Nominal Value (English)	Nominal Value (SI)	Test Method
Gloss (45°, 1.00 mil (25.4 µm))	29	29	ASTM D2457
Haze (1.00 mil (25.4 µm))	22 %	22 %	ASTM D1003
Extrusion	Nominal Value (English)	Nominal Value (SI)	
Melt Temperature	451 °F	233 °C	

Extrusion Notes

Fabrication Conditions For Blown Film:

- Screw Size: 2.5in. (63.5mm) 30:1 ratio L/D
- Screw Type: DSBII
- Die Gap: 70 mil (1.8 mm)
- Melt Temperature: 451°F (233°C)
- Output: 11.9 lb/hr/in. of die circumference
- Die Diameter: 8 in.
- Blow-Up Ratio: 2.5 to 1
- Screw Speed: 44.2rpm
- Frost Line Height: 34 in. (864mm)

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.

² Method B

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Additional Information

North America		Europe/Middle East	+800-3694-6367
U.S. & Canada:	1-800-441-4369		+31-11567-2626
	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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