Technical Data Sheet

XUS 59999.44 Enhanced Polyethylene Resin

Overview

XUS 59999.44 Enhanced Polyethylene Resin is an enhanced LLDPE ethylene-octene copolymer from Dow. This grade is a fully formulated sealant resin designed for demanding applications where hot tack strength is a key requirement.

Main Characteristics

- High hot tack strength
- Broad hot tack window
- Low heat seal initiation temperature
- High throughput resin with excellent bubble stability

Complies with:

- U.S. FDA FCN 424
- Canadian HPFB No Objection
- EU, No 20/2011

Consult the regulations for complete details.

Additive

- Antiblock: 1875 ppm
- Slip: 750 ppm
- Processing aid: No

Properties

Physical	Nominal Value	Unit (English)	Nominal Value	Unit (SI)	Test Method[1]
Density	0.908	g/cm^3	0.908	g/cm^3	ASTM D792
Base Density[2]	0.907	g/cm^3	0.907	g/cm^3	Dow Method
Melt Index (190°C/2.16 kg)	0.85	g/10 min	0.85	g/10 min	ASTM D1238
Films					
Film Thickness - Tested	1	mil	25	pm	
Film Puncture Energy (1.0 mil (25 pm))	38.0		4.29	J	Dow Method
Film Puncture Force (1.0 mil (25 pm))	12.2	lbf	54.3	N	Dow Method
Film Puncture Resistance (1.0 mil (25 pm))	253	ft-lb/in^3	20.9	J/cm^3	Dow Method

1. ASTM: American Society for Testing and Materials
2. 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/cm^3. Base density is the estimated density of the polymer if it did not contain any antiblock.

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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Properties (Cont.)

Films	Nominal Value	Unit (English)	Nominal Value	Unit (SI)	Test Method
Secant Modulus					ASTM D882
2% Secant, MD : 1.0 mil (25 pm)	10000	psi	68.9	MPa	
2% Secant, TD : 1.0 mil (25 pm)	11200	psi	77.2	MPa	
Tensile Strength					ASTM D882
MD : Yield, 1.0 mil (25 pm)	1150	psi	7.93	MPa	
TD : Yield, 1.0 mil (25 pm)	1130	psi	7.79	MPa	
MD : Break, 1.0 mil (25 pm)	7100	psi	49.0	MPa	
TD : Break, 1.0 mil (25 pm)	5800	psi	40.0	MPa	
Tensile Elongation					ASTM D882
MD : Break, 1.0 mil (25 pm)	450	%	450	%	
TD : Break, 1.0 mil (25 pm)	600	%	600	%	
Dart Drop Impact (1.0 mil (25 pm))	1000	g	1000	g	ASTM D1709B
Elmendorf Tear Strength[3]					ASTM D1922
MD : 1.0 mil (25 pm)	210	g	210	g	
TD : 1.0 mil (25 pm)	430	g	430	g	
Thermal					
Melting Temperature (DSC)	223	°F	106	°C	Dow Method
Optical					
Gloss (45°, 1.00 mil (25.4 pm))	63		63		ASTM D2457
Haze (1.00 mil (25.4 pm))	7.90	%	7.90	%	ASTM D1003
Additional Information					
VFFS Hot Tack Window[4]	45 (205–250) 25 (96–121)	°F °C	45 (205–250) 25 (96–121)	°F °C	Dow Method
Extrusion Notes					

Fabrication Conditions for Blown Film:

- Screw Size: 3.5in. (88.9 mm); 30:1 ratio LID
- Screw Type: DSBII
- Die Gap: 70 mi1 (1.8 mm)
- Melt Temperature: 433°F (223°C)
- Output: 11.9 lb/hr/in. of die circumference
- Die Diameter: 8 in.
- Blow-up Ratio: 2.5 to 1
- Frost Line Height: 52 in. (1321 mm)

3. Method B
4. 2 mil coex film, 20/60/20 with MDPE core, sealant layer formulated with 10% LDPE and slip and AB. Tested on VFFS machine with 4 lbs fill weight, 0.25 second dwell time.

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