Technical Data Sheet

ELITE™ 5401GT Enhanced Polyethylene Resin

Overview

ELITE™ 5401GT Enhanced Polyethylene Resin is a copolymer produced via INSITE™ Technology from Dow. It offers extremely high impact resistance, combined with excellent tear, tensile and optical properties for high strength blown film applications. ELITE™ 5401GT Enhanced Polyethylene Resin offers a unique combination of low seal initiation temperature and high modulus and low blocking tendency for automatic packaging applications. ELITE™ 5401GT Enhanced Polyethylene Resin contains slip and antiblock additives.

Applications:

- Food and specialty packaging films
- Very tough thin gauge films

Complies with:

- EU, No 10/2011
- U.S. FDA FCN 424

Consult the regulations for complete details.

Sustainability Attribute:

Resoursa™
Advancing resource efficiency with Dow

Additive

- Antiblock: 2750 ppm
- Slip: 1000 ppm
- Processing aid: No

Physical Properties

Physical	Nominal Value	Unit (English)	Nominal Value	Unit (SI)	Test Method[1]
Density	0.917	g/cm^3	0.917	g/cm^3	ASTM D792
Base Density[2]	0.916	g/cm^3	0.916	g/cm^3	Dow Method
Melt Index (190°C/2.16 kg)	1.0	g/10 min	1.0	g/10 min	ISO 1133

1. ASTM: American Society for Testing and Materials
   ISO: International Standardization Organization
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.

Physical Properties (Cont.)

Films	Nominal Value	Unit (English)	Nominal Value	Unit (SI)	Test Method
Film Thickness - Tested	2	mil	51	µm	
Film Puncture Energy[3] (2.0 mil (51 µm))	53.1	in·lb	6.00	J	ASTM D5748
Film Puncture Force[3] (2.0 mil (51 µm))	18.0	lbf	80.0	N	ASTM D5748
Tensile Modulus[3]					ISO 527-3
2% Secant, MD: 2.0 mil (51 µm)	26300	psi	181	MPa	
2% Secant, TD: 2.0 mil (51 µm)	29600	psi	204	MPa	
Tensile Stress[3]					ISO 527-3
MD : Yield, 2.0 mil (51 µm)	1160	psi	8.00	MPa	
TD : Yield, 2.0 mil (51 µm)	1310	psi	9.00	MPa	
MD : Break. 2.0 mil (51 µm)	5510	psi	38.0	MPa	
TD : Break, 2.0 mil (51 µm)	5370	psi	37.0	MPa	
Tensile Elongation[3]					ISO 527-3
MD : Break. 2.0 mil (51 µm)	570	%	570	%	
TD : Break, 2.0 mil (51 µm)	610	%	610	%	
Dart Drop Impact[3] (2.0 mil (51 µm))	> 850	g	> 850	g	ISO 7765-1/B
Elmendorf Tear Strength[3]					ASTM D1922
MD : 2.0 mil (51 µm)	780	g	780	g	
TD : 2.0 mil (51 µm)	980	g	980	g	
Seal Initiation Temperature[4]					Dow Method
2.0 mil (51 µm)	203	°F	95.0	°C	
Thermal					
Vicat Softening Temperature	212	°F	100	°C	ASTM D1525
Melting Temperature (DSC)	253	°F	123	°C	DSC
Optical					
Gloss[3] (45°, 2.01 mil (51.0 µm))	64		64		ASTM D2457
Haze[3] (2.01 mil (51.0 µm))	13.0	%	13.0	%	ISO 14782
Extrusion					
Melt Temperature	374 to 482	°F	190 to 250	°C	
Extrusion Notes					

Fabrication Conditions for Blown Film Extrusion:

- Die Gap: 0.8–2.8 mm
- Melt Temperature: 190–250°C
- Blow-Up Ratio: 1.5 to 3.5

3. Blown film extruded at 232°C, 2.5:1 BUR, 1.8 mm die gap.
4. Blown film extruded at 232°C, 2.5:1 BUR, 1.8 mm die gap. Temperature at which 5.25 N/15 mm heat seal strength is achieved.

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