



ELITE™ 5100G

The Dow Chemical Company - Enhanced Polyethylene Resin

Tuesday, November 5, 2019

General Information

Product Description

- For industrial and consumer film applications
- Extremely high impact strength
- Low blocking tendencies for improved handling and convertibility

Complies with:

- U.S. FDA 21 CFR 177.1520 (c) 3.2a.
- Canadian HPFB No Objection
- Consult the regulations for complete details.

ELITE™ 5100G Enhanced Polyethylene Resin is a copolymer produced via INSITE™ Technology from Dow Plastics. It offers excellent impact strength, good tensile and puncture properties for thick and thin gauge industrial and consumer blown film applications. This resin exhibits higher hot tack strengths than LLDPE, making it ideal for automated packaging applications.

General

Material Status	• Commercial: Active
Availability	• Asia Pacific • Europe
Additive	• Antiblock: No
Agency Ratings	• FDA 21 CFR 177.1520(c) 3.2a
Forms	• Pellets
Processing Method	• Blown Film

ASTM & ISO Properties ¹

Physical	Nominal Value	Unit	Test Method
Density / Specific Gravity	0.922		ASTM D792
Melt Mass-Flow Rate (190°C/2.16 kg)	0.85	g/10 min	ASTM D1238
Films	Nominal Value	Unit	Test Method
Film Thickness - Tested	1	mil	
Film Puncture Energy	51.0	in-lb	Internal Method
Film Puncture Force	14.5	lbf	Internal Method
Film Puncture Resistance	342	ft-lb/in ³	Internal Method
Film Toughness - MD	1190	ft-lb/in ³	ASTM D882
Film Toughness - TD	1190	ft-lb/in ³	ASTM D882
Secant Modulus			ASTM D882
1% Secant, MD	39400	psi	
2% Secant, MD	33500	psi	
Secant Modulus			ASTM D882
1% Secant, TD	44900	psi	
2% Secant, TD	37200	psi	
Tensile Strength - MD (Yield)	1720	psi	ASTM D882
Tensile Strength - TD (Yield)	1800	psi	ASTM D882
Tensile Strength - MD (Break)	6330	psi	ASTM D882
Tensile Strength - TD (Break)	5220	psi	ASTM D882
Tensile Elongation - MD (Break)	480	%	ASTM D882

ELITE™ 5100G

The Dow Chemical Company - Enhanced Polyethylene Resin

Films	Nominal Value	Unit	Test Method
Tensile Elongation - TD (Break)	620	%	ASTM D882
Dart Drop Impact	540	g	ASTM D1709A
Elmendorf Tear Strength - MD	260	g	ASTM D1922
Elmendorf Tear Strength - TD	670	g	ASTM D1922
Thermal	Nominal Value	Unit	Test Method
Vicat Softening Temperature	223	°F	ASTM D1525
Melting Temperature (DSC)	253	°F	Internal Method
Optical	Nominal Value	Unit	Test Method
Gloss (45°)	33		ASTM D2457
Haze	20.0	%	ASTM D1003

Processing Information

Extrusion Notes

Fabrication Conditions For Blown Film:

- Screw Size: 3.5 in.
- Screw Type: DSB II
- Die Gap: 70 mil (1.8 mm)
- Melt Temperature: 413°F
- Output: 12 lb/hr/in of die circumference
- Die Diameter: 8 in.
- Blow-Up Ratio: 2.5:1
- Screw Speed: 40 rpm
- Frost Line Height: 37 in.

Notes

¹ Typical properties: these are not to be construed as specifications.