DOW™ LDPE 690 HEALTH+™

The Dow Chemical Company - Low Density Polyethylene Resin

Tuesday, November 5, 2019

General Information

Product Description

DOW™ LDPE 690 HEALTH+™ is a Low Density Polyethylene barefoot resin designed for extrusion blow molding, injection blow molding, and blow-fill seal applications with good flexibility, moderate rigidity and good chemical resistance. It is also suitable for medical packaging films.

Main Characteristics:

- Good flexibility
- Good chemical resistance
- Good stiffness

Complies with:

- U.S. FDA 21CFR 177.1520 (c) 2.2
- USP Class VI
- Drug Master File Listing
- Canadian HPFB (No Objections)
- EU, No 10/2011
- Consult the regulations for complete details.

General			
Material Status	• Commercial: Active		
Availability	• North America		
Additive	• Antiblock: No	• Processing Aid: No	• Slip: No
Agency Ratings	• DMF Unspecified Rating • EU No 10/2011	• FDA 21 CFR 177.1520(c) 2.2 • HPFB (Canada) No Objection	• USP Class VI
Forms	• Pellets		
Processing Method	• Extrusion Blow Molding	• Injection Blow Molding	

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)	2.0	g/10 min	ASTM D1238
Films	**Nominal Value**	**Unit**	**Test Method**
Film Thickness - Tested	2	mil	
Film Puncture Resistance (2.0 mil)	35.0	ft·lb/in³	Internal Method
Film Toughness - MD (2.0 mil)	1920	ft·lb/in³	ASTM D882
Film Toughness - TD (2.0 mil)	2230	ft·lb/in³	ASTM D882
Secant Modulus - 2% Secant, MD (2.0 mil)	26200	psi	ASTM D882
Secant Modulus - 2% Secant, TD (2.0 mil)	30000	psi	ASTM D882
Tensile Strength - MD (Yield, 2.0 mil)	1790	psi	ASTM D882
Tensile Strength - TD (Yield, 2.0 mil)	1760	psi	ASTM D882
Tensile Strength - MD (Break, 2.0 mil)	3600	psi	ASTM D882
Tensile Strength - TD (Break, 2.0 mil)	3330	psi	ASTM D882
Tensile Elongation - MD (Break, 2.0 mil)	420	%	ASTM D882
Tensile Elongation - TD (Break, 2.0 mil)	670	%	ASTM D882
Dart Drop Impact (2.0 mil)	150	g	ASTM D1709A
Elmendorf Tear Strength - MD [2] (2.0 mil)	500	g	ASTM D1922

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Films	Nominal Value	Unit	Test Method
Elmendorf Tear Strength - TD [2] (2.0 mil)	280	g	ASTM D1922
Thermal	**Nominal Value**	**Unit**	**Test Method**
Vicat Softening Temperature	209	°F	ASTM D1525
Melting Temperature (DSC)	233	°F	Internal Method
Optical	**Nominal Value**	**Unit**	**Test Method**
Gloss (45°, 2.00 mil)	66		ASTM D2457
Haze (2.00 mil)	7.60	%	ASTM D1003

Processing Information

Extrusion	Nominal Value	Unit
Melt Temperature	450	°F

Extrusion Notes

Fabrication Conditions For Blown Film:

- Screw Size: 2.5in. (63.5mm); 30/1 ratio L/D
- Screw Type: Single Flight Double Mix
- Die Gap: 40mil (1.6 mm)
- Melt Temperature: 390°F (199°C)
- Output: 7 lb/hr/in. of die circumference
- Die Diameter: 6 in.
- Blow-Up Ratio: 2.5 to 1
- Screw Speed: 60 rpm
- Frost Line Height: 25 in. (635 mm)

Notes

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

[2] Method B