TUFLIN™ HS-7066 NT 7

The Dow Chemical Company - Linear Low Density Polyethylene Resin

Tuesday, November 5, 2019

General Information

Product Description

- Hexene Linear Low Density Resin
- Good Strength and Stiffness
- Complies with U.S. FDA 21 177.1520 (c) 3.2a
- Consult the regulations for complete details.

TUFLIN™ HS-7066 NT 7 Linear Low Density Polyethylene Resin is a fractional melt, ethylene-hexene copolymer, linear low density (LLDPE) resin designed for good toughness and stiffness. This product is recommended for thin and thick gauge applications such as consumer trash bags and industrial heavy-duty shipping sacks that require strength and machinability.

General			
Material Status	• Commercial: Active		
Availability	• North America		
Additive	• Antiblock: No	• Processing Aid: No	• Slip: 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	0.928		ASTM D792
Melt Mass-Flow Rate (190°C/2.16 kg)	0.80	g/10 min	ASTM D1238
Films	**Nominal Value**	**Unit**	**Test Method**
Film Puncture Energy			Internal Method
0.80 mil	21.0	in·lb	
2.0 mil	48.0	in·lb	
Film Puncture Force			Internal Method
0.80 mil	9.00	lbf	
2.0 mil	18.0	lbf	
Film Puncture Resistance			Internal Method
0.80 mil	172	ft·lb/in³	
2.0 mil	159	ft·lb/in³	
Film Toughness - MD			ASTM D882
0.80 mil	3620	ft·lb/in³	
2.0 mil	4200	ft·lb/in³	
Film Toughness - TD			ASTM D882
0.80 mil	3880	ft·lb/in³	
2.0 mil	4270	ft·lb/in³	
Secant Modulus - 2% Secant, MD			ASTM D882
0.80 mil	40000	psi	
2.0 mil	40900	psi	
Secant Modulus - 2% Secant, TD			ASTM D882
0.80 mil	48300	psi	
2.0 mil	48300	psi	

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Films	Nominal Value	Unit	Test Method
Tensile Strength - MD			ASTM D882
Yield, 0.80 mil	2360	psi	
Yield, 2.0 mil	2140	psi	
Tensile Strength - TD			ASTM D882
Yield, 0.80 mil	2860	psi	
Yield, 2.0 mil	2330	psi	
Tensile Strength - MD			ASTM D882
Break, 0.80 mil	8520	psi	
Break, 2.0 mil	7670	psi	
Tensile Strength - TD			ASTM D882
Break, 0.80 mil	6260	psi	
Break, 2.0 mil	6670	psi	
Tensile Elongation - MD			ASTM D882
Break, 0.80 mil	600	%	
Break, 2.0 mil	790	%	
Tensile Elongation - TD			ASTM D882
Break, 0.80 mil	730	%	
Break, 2.0 mil	850	%	
Dart Drop Impact			
0.80 mil	58	g	ASTM D1709A
0.80 mil	< 100	g	ASTM D1709B
2.0 mil	190	g	ASTM D1709A
2.0 mil	< 100	g	ASTM D1709B
Elmendorf Tear Strength - MD [2]			ASTM D1922
0.80 mil	180	g	
2.0 mil	470	g	
Elmendorf Tear Strength - TD [2]			ASTM D1922
0.80 mil	650	g	
2.0 mil	1100	g	
Seal Initiation Temperature [3]			Internal Method
0.80 mil	248	°F	
2.0 mil	266	°F	

Thermal	Nominal Value	Unit	Test Method
Vicat Softening Temperature	235	°F	ASTM D1525
Melting Temperature (DSC)	257	°F	Internal Method

Optical	Nominal Value	Unit	Test Method
Gloss			ASTM D2457
20°, 0.800 mil	66		
20°, 2.00 mil	55		
45°, 0.800 mil	56		
45°, 2.00 mil	54		
Haze			ASTM D1003
0.800 mil	9.00	%	
2.00 mil	16.0	%	

Additional Information	Nominal Value	Unit	Test Method
Seal Strength [4]			Internal Method
320°F, 0.8 mil	1300	g	
356°F, 2.0 mil	2200	g	

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Processing Information

Extrusion	Nominal Value	Unit
Melt Temperature	453	°F

Extrusion Notes

Fabrication Conditions For Blown Film:

- Screw Size: 2.5 in. (63.5 mm) 30:1 L/D
- Screw Type: DSBII
- Die Gap: 70 mil (1.8 mm)
- Melt Temperature: 453 °F (234 °C)
- Output: 10 lb/hr/in. of die circumference
- Die Diameter: 6 in.
- Blow-Up Ratio: 2.5 to 1
- Screw Speed: 80 rpm
- Frost Line Height: 25 in. (635 mm)

Notes

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

[2] Method B

[3] Temperature at which 1 lb/in. (4.4 N/25.4 mm) heat seal strength is achieved.
Heat Seal Strengths, Topwave HT Tester 0.5 S dwell, 40 psi bar pressure, pull speed 10 (in./min.).

[4] Heat Seal Strengths, Topwave HT Tester 0.5 S dwell, 40 psi bar pressure, pull speed 10 (in./min.).