



TUFLIN™ HS-7094 NT 7

The Dow Chemical Company - Linear Low Density Polyethylene Resin

Tuesday, November 5, 2019

General Information

Product Description

TUFLIN™ HS-7094 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 trash bags and heavy-duty shipping sacks that require strength and output.

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

General

Material Status	• Commercial: Active
Availability	• North America
Additive	• Antiblock: 6000 ppm • Processing Aid: Yes • 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	0.932		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	13.0	in·lb	
2.0 mil	28.0	in·lb	
Film Puncture Force			Internal Method
0.80 mil	7.00	lbf	
2.0 mil	15.0	lbf	
Film Puncture Resistance			Internal Method
0.80 mil	101	ft·lb/in ³	
2.0 mil	85.0	ft·lb/in ³	
Film Toughness - MD			ASTM D882
0.80 mil	3620	ft·lb/in ³	
2.0 mil	4080	ft·lb/in ³	
Film Toughness - TD			ASTM D882
0.80 mil	4160	ft·lb/in ³	
2.0 mil	4320	ft·lb/in ³	
Secant Modulus - 2% Secant, MD			ASTM D882
0.80 mil	43700	psi	
2.0 mil	42000	psi	
Secant Modulus - 2% Secant, TD			ASTM D882
0.80 mil	47400	psi	
2.0 mil	46700	psi	

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Films	Nominal Value	Unit	Test Method
Tensile Strength - MD			ASTM D882
Yield, 0.80 mil	2330	psi	
Yield, 2.0 mil	2210	psi	
Tensile Strength - TD			ASTM D882
Yield, 0.80 mil	2390	psi	
Yield, 2.0 mil	2370	psi	
Tensile Strength - MD			ASTM D882
Break, 0.80 mil	8660	psi	
Break, 2.0 mil	7740	psi	
Tensile Strength - TD			ASTM D882
Break, 0.80 mil	6470	psi	
Break, 2.0 mil	6880	psi	
Tensile Elongation - MD			ASTM D882
Break, 0.80 mil	570	%	
Break, 2.0 mil	740	%	
Tensile Elongation - TD			ASTM D882
Break, 0.80 mil	840	%	
Break, 2.0 mil	850	%	
Dart Drop Impact			
0.80 mil	52	g	ASTM D1709A
0.80 mil	< 100	g	ASTM D1709B
2.0 mil	170	g	ASTM D1709A
2.0 mil	< 100	g	ASTM D1709B
Elmendorf Tear Strength - MD ²			ASTM D1922
0.80 mil	170	g	
2.0 mil	590	g	
Elmendorf Tear Strength - TD ²			ASTM D1922
0.80 mil	800	g	
2.0 mil	1300	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	237	°F	ASTM D1525
Melting Temperature (DSC)	259	°F	Internal Method
Optical	Nominal Value	Unit	Test Method
Gloss			ASTM D2457
20°, 0.800 mil	23		
20°, 2.00 mil	26		
45°, 0.800 mil	43		
45°, 2.00 mil	44		
Haze			ASTM D1003
0.800 mil	18.0	%	
2.00 mil	21.0	%	
Additional Information	Nominal Value	Unit	Test Method
Seal Strength ⁴			Internal Method
320°F, 0.8 mil	1500	g	
338°F, 2.0 mil	2600	g	

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Processing Information

Extrusion	Nominal Value	Unit
Melt Temperature	451	°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: 451 °F (233 °C)
- Output: 10 lb/hr/in. of die circumference
- Die Diameter: 6 in.
- Blow-Up Ratio: 2.5 to 1
- Screw Speed: 78 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.).