



TUFLIN™ HS-7094 NT 7

Linear Low Density Polyethylene Resin

Overview

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.

Additive

- Antiblock: 6000 ppm
- Slip: No
- Processing Aid: Yes

Physical	Nominal Value (English)	Nominal Value (SI)	Test Method
Density	0.930 g/cm ³	0.930 g/cm ³	ASTM D792
Base Density ¹	0.926 g/cm ³	0.926 g/cm ³	Dow Method
Melt Index (190°C/2.16 kg)	0.80 g/10 min	0.80 g/10 min	ASTM D1238
Films	Nominal Value (English)	Nominal Value (SI)	Test Method
Film Puncture Energy			Dow Method
0.80 mil (20 µm)	13.0 in·lb	1.47 J	
2.0 mil (51 µm)	28.0 in·lb	3.16 J	
Film Puncture Force			Dow Method
0.80 mil (20 µm)	7.00 lbf	31.1 N	
2.0 mil (51 µm)	15.0 lbf	66.7 N	
Film Puncture Resistance			Dow Method
0.80 mil (20 µm)	101 ft·lb/in ³	8.36 J/cm ³	
2.0 mil (51 µm)	85.0 ft·lb/in ³	7.03 J/cm ³	
Film Toughness			ASTM D882
MD : 0.80 mil (20 µm)	3620 ft·lb/in ³	300 J/cm ³	
MD : 2.0 mil (51 µm)	4080 ft·lb/in ³	337 J/cm ³	
TD : 0.80 mil (20 µm)	4160 ft·lb/in ³	344 J/cm ³	
TD : 2.0 mil (51 µm)	4320 ft·lb/in ³	357 J/cm ³	
Secant Modulus			ASTM D882
2% Secant, MD : 0.80 mil (20 µm)	43700 psi	302 MPa	
2% Secant, MD : 2.0 mil (51 µm)	42000 psi	290 MPa	
2% Secant, TD : 0.80 mil (20 µm)	47400 psi	327 MPa	
2% Secant, TD : 2.0 mil (51 µm)	46700 psi	322 MPa	
Tensile Strength			ASTM D882
MD : Yield, 0.80 mil (20 µm)	2330 psi	16.1 MPa	
MD : Yield, 2.0 mil (51 µm)	2210 psi	15.2 MPa	
TD : Yield, 0.80 mil (20 µm)	2390 psi	16.5 MPa	
TD : Yield, 2.0 mil (51 µm)	2370 psi	16.4 MPa	
MD : Break, 0.80 mil (20 µm)	8660 psi	59.7 MPa	
MD : Break, 2.0 mil (51 µm)	7740 psi	53.4 MPa	
TD : Break, 0.80 mil (20 µm)	6470 psi	44.6 MPa	
TD : Break, 2.0 mil (51 µm)	6880 psi	47.5 MPa	
Tensile Elongation			ASTM D882
MD : Break, 0.80 mil (20 µm)	570 %	570 %	
MD : Break, 2.0 mil (51 µm)	740 %	740 %	
TD : Break, 0.80 mil (20 µm)	840 %	840 %	
TD : Break, 2.0 mil (51 µm)	850 %	850 %	



Films	Nominal Value (English)	Nominal Value (SI)	Test Method
Dart Drop Impact			
0.80 mil (20 µm)	52 g	52 g	ASTM D1709A
0.80 mil (20 µm)	< 100 g	< 100 g	ASTM D1709B
2.0 mil (51 µm)	170 g	170 g	ASTM D1709A
2.0 mil (51 µm)	< 100 g	< 100 g	ASTM D1709B
Elmendorf Tear Strength ²			ASTM D1922
MD : 0.80 mil (20 µm)	170 g	170 g	
MD : 2.0 mil (51 µm)	590 g	590 g	
TD : 0.80 mil (20 µm)	800 g	800 g	
TD : 2.0 mil (51 µm)	1300 g	1300 g	
Seal Initiation Temperature ³			Dow Method
0.80 mil (20 µm)	248 °F	120 °C	
2.0 mil (51 µm)	266 °F	130 °C	
Thermal	Nominal Value (English)	Nominal Value (SI)	Test Method
Vicat Softening Temperature	237 °F	114 °C	ASTM D1525
Melting Temperature (DSC)	259 °F	126 °C	Dow Method
Optical	Nominal Value (English)	Nominal Value (SI)	Test Method
Gloss			ASTM D2457
20°, 0.800 mil (20.3 µm)	23	23	
20°, 2.00 mil (50.8 µm)	26	26	
45°, 0.800 mil (20.3 µm)	43	43	
45°, 2.00 mil (50.8 µm)	44	44	
Haze			ASTM D1003
0.800 mil (20.3 µm)	18 %	18 %	
2.00 mil (50.8 µm)	21 %	21 %	
Additional Information	Nominal Value (English)	Nominal Value (SI)	Test Method
Seal Strength ⁴			Dow Method
320°F (160°C), 0.8 mil (20.3 µm)	1500 g	1500 g	
338°F (170°C), 2.0 mil (50.8 µm)	2600 g	2600 g	
Extrusion	Nominal Value (English)	Nominal Value (SI)	
Melt Temperature	451 °F	233 °C	

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

These are typical properties only and are not to be construed as specifications. Users should confirm results by their own tests.

¹ 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/cm³. Base density is the estimated density of the polymer if it did not contain any antiblock.

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.).

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

