



TUFLIN™ HS-7066 NT 7

Linear Low Density Polyethylene Resin

Overview

- 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.

Additive

- Antiblock: No
- Slip: No
- Processing Aid: No

Physical	Nominal Value (English)	Nominal Value (SI)	Test Method
Density	0.926 g/cm ³	0.926 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)	21.0 in·lb	2.37 J	
2.0 mil (51 µm)	48.0 in·lb	5.42 J	
Film Puncture Force			Dow Method
0.80 mil (20 µm)	9.00 lbf	40.0 N	
2.0 mil (51 µm)	18.0 lbf	80.1 N	
Film Puncture Resistance			Dow Method
0.80 mil (20 µm)	172 ft·lb/in ³	14.2 J/cm ³	
2.0 mil (51 µm)	159 ft·lb/in ³	13.2 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)	4200 ft·lb/in ³	348 J/cm ³	
TD : 0.80 mil (20 µm)	3880 ft·lb/in ³	321 J/cm ³	
TD : 2.0 mil (51 µm)	4270 ft·lb/in ³	353 J/cm ³	
Secant Modulus			ASTM D882
2% Secant, MD : 0.80 mil (20 µm)	40000 psi	276 MPa	
2% Secant, MD : 2.0 mil (51 µm)	40900 psi	282 MPa	
2% Secant, TD : 0.80 mil (20 µm)	48300 psi	333 MPa	
2% Secant, TD : 2.0 mil (51 µm)	48300 psi	333 MPa	
Tensile Strength			ASTM D882
MD : Yield, 0.80 mil (20 µm)	2360 psi	16.3 MPa	
MD : Yield, 2.0 mil (51 µm)	2140 psi	14.8 MPa	
TD : Yield, 0.80 mil (20 µm)	2860 psi	19.7 MPa	
TD : Yield, 2.0 mil (51 µm)	2330 psi	16.0 MPa	
MD : Break, 0.80 mil (20 µm)	8520 psi	58.8 MPa	
MD : Break, 2.0 mil (51 µm)	7670 psi	52.9 MPa	
TD : Break, 0.80 mil (20 µm)	6260 psi	43.1 MPa	
TD : Break, 2.0 mil (51 µm)	6670 psi	46.0 MPa	
Tensile Elongation			ASTM D882
MD : Break, 0.80 mil (20 µm)	600 %	600 %	
MD : Break, 2.0 mil (51 µm)	790 %	790 %	
TD : Break, 0.80 mil (20 µm)	730 %	730 %	
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)	58 g	58 g	ASTM D1709A
0.80 mil (20 µm)	< 100 g	< 100 g	ASTM D1709B
2.0 mil (51 µm)	190 g	190 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)	180 g	180 g	
MD : 2.0 mil (51 µm)	470 g	470 g	
TD : 0.80 mil (20 µm)	650 g	650 g	
TD : 2.0 mil (51 µm)	1100 g	1100 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	235 °F	113 °C	ASTM D1525
Melting Temperature (DSC)	257 °F	125 °C	Dow Method
Optical	Nominal Value (English)	Nominal Value (SI)	Test Method
Gloss			ASTM D2457
20°, 0.800 mil (20.3 µm)	66	66	
20°, 2.00 mil (50.8 µm)	55	55	
45°, 0.800 mil (20.3 µm)	56	56	
45°, 2.00 mil (50.8 µm)	54	54	
Haze			ASTM D1003
0.800 mil (20.3 µm)	9.0 %	9.0 %	
2.00 mil (50.8 µm)	16 %	16 %	
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)	1300 g	1300 g	
356°F (180°C), 2.0 mil (50.8 µm)	2200 g	2200 g	
Extrusion	Nominal Value (English)	Nominal Value (SI)	
Melt Temperature	453 °F	234 °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: 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

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.).

