TUFLIN™ HSE-1003 NT 7

Linear Low Density Polyethylene Resin

The Dow Chemical Company

Message:

Industrial pallet wrap stretch film applications
Premium film packaging applications
Complies with U.S. FDA 21 CFR 177.1520 (c) 3.1a
Consult the regulations for complete details.
TUFLIN™ HSE-1003 NT 7 Linear Low Density Polyethylene Resin is an ethylene-hexene-1 copolymer designed for cast stretch film applications such as industrial pallet wrap. Films containing HSE-1003 offer outstanding puncture, toughness and load holding properties.

General Information			
Agency Ratings	FDA 21 CFR 177.1520(c) 3.1a		
Forms	Particle		
Processing Method	cast film		
Physical	**Nominal Value**	**Unit**	**Test Method**
Specific Gravity	0.918	g/cm³	ASTM D792
Melt Mass-Flow Rate (MFR) (190°C/2.16 kg)	2.5	g/10 min	ASTM D1238
Films	**Nominal Value**	**Unit**	**Test Method**
Film Puncture Energy			Internal method
20 µm	3.84	J	Internal method
51 µm	8.25	J	Internal method
Film Puncture Force			Internal method
20 µm	40.0	N	Internal method
51 µm	84.5	N	Internal method
Film Puncture Resistance			Internal method
20 µm	26.4	J/cm³	Internal method
51 µm	20.8	J/cm³	Internal method
Film strength			ASTM D882
MD : 20 µm	209	J/cm³	ASTM D882
MD : 51 µm	255	J/cm³	ASTM D882
TD : 20 µm	269	J/cm³	ASTM D882
TD : 51 µm	334	J/cm³	ASTM D882
secant modulus			ASTM D882
2% secant, MD: 20 µm	147	MPa	ASTM D882
2% secant, MD: 51 µm	142	MPa	ASTM D882
2% secant, TD: 20 µm	156	MPa	ASTM D882
2% secant, TD: 51 µm	142	MPa	ASTM D882
Tensile Strength			ASTM D882
MD: Yield, 20 µm	11.2	MPa	ASTM D882

MD: Yield, 51 µm	10.2	MPa	ASTM D882
TD: Yield, 20 µm	10.5	MPa	ASTM D882
TD: Yield, 51 µm	9.98	MPa	ASTM D882
MD: Break, 20 µm	49.8	MPa	ASTM D882
MD: Fracture, 51 µm	38.4	MPa	ASTM D882
TD: Break, 20 µm	36.1	MPa	ASTM D882
TD: Fracture, 51 µm	44.2	MPa	ASTM D882
Tensile Elongation			ASTM D882
MD: Break, 20 µm	520	%	ASTM D882
MD: Fracture, 51 µm	720	%	ASTM D882
TD: Break, 20 µm	830	%	ASTM D882
TD: Fracture, 51 µm	900	%	ASTM D882
Dart Drop Impact			
20 µm	130	g	ASTM D1709A
20 µm	< 100	g	ASTM D1709B
51 µm	270	g	ASTM D1709A
51 µm	170	g	ASTM D1709B
Elmendorf Tear Strength [1]			ASTM D1922
MD : 20 µm	180	g	ASTM D1922
MD : 51 µm	780	g	ASTM D1922
TD : 20 µm	620	g	ASTM D1922
TD : 51 µm	1100	g	ASTM D1922
Unstretched bond			ASTM D5458
20.3 µm	210	g	ASTM D5458
50.8 µm	280	g	ASTM D5458
Final stretch [2]			Internal method
20.3 µm	330	%	Internal method
50.8 µm	520	%	Internal method
Thermal	**Nominal Value**	**Unit**	**Test Method**
Vicat Softening Temperature	98.9	°C	ASTM D1525
Melting Temperature (DSC)	124	°C	Internal method
Optical	**Nominal Value**	**Unit**	**Test Method**
Gloss			ASTM D2457
20°, 20.3 µm	156		ASTM D2457
20°, 50.8 µm	146		ASTM D2457
45°, 20.3 µm	95		ASTM D2457
45°, 50.8 µm	91		ASTM D2457
Haze			ASTM D1003
20.3 µm	1.0	%	ASTM D1003
50.8 µm	4.0	%	ASTM D1003
Extrusion	**Nominal Value**	**Unit**	
Melt Temperature	274	°C	

Extrusion instructions
铸造薄膜的制造条件: EGAN/Davis 标准 5 层铸造生产线 熔体温度:525 °F (274 °C) 冷却辊(主/次)温度:70 °F (21 °C) 生产线速度:0.8 密尔 = 600 fpm(183 米/分);2.0 密尔 = 200 fpm(61 米/分) 输出:0.8 密尔 = 416 磅/小时;2.0 密尔 = 341 磅/小时 模具宽度:36 英寸 (914 mm) 模具间隙:25 密尔 (0.65 mm) 气隙:3 英寸 (76 mm)

NOTE	
1.	Method B
2.	Testing on pallets; highlighting Industries Inc. test methods.

Recommended distributors for this material

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