

Technical Data Sheet
TYPE: Polyether Thermoplastic Polyurethane (TPU)

SPECIAL FEATURE: High Moisture Vapor Transmission, Oeko-Tex® Standard 100 Compliant

PROCESSES: Extrusion: Film, Sheet, Fabric Coating

Estane MVT 90 NT1 Film Properties

Permeability Moisture Vapor Transmission*	Test Method		Results	
	1 mil (25 microns) film g/m ² /day	ASTM D-6701 (Mocon)		3000
ASTM E-96 BW (Inverted Cup)			10000	
ASTM E-96 B (Upright Cup)			740	
JIS L1099 (A1)			3000	
Physical Properties*	Tensile Stress ASTM D-882 (psi)	@ 100% Strain	1200	
		@300% Strain	2800	
		@Break	5300	
		Elongation at break	440	
	Tear Strength ASTM D-1938 (lbs./in)	Max. Tear Resistance	145	
		Ave. Tear Resistance	120	

Estane MVT 90 NT1 Resin Properties

Physical Properties*	Test Method		Results	
	30 mil films	Hardness (ASTM D2240)	Shore	90A
Specific Gravity (ASTM D-792)		g/cm ³	1.22	
Tensile Strength (ASTM D-412)		psi/MPa	5000	34.5
Modulus (ASTM D412/D638)		@100 %Elongation	900	6.2
		@300% Elongation	2000	13.8
Ultimate Elongation (ASTM D-412)			550%	
Tear (ASTM D-624 Die C)		lb./in / kN/m	450	78.8
Split Tear Resistance (ASTM D-470)		lb./in / kN/m	120	21.0
Volume Swell (LZAM)		(23°C/ 24hours)	40%	
Thermal Properties*	Melting Temperature (LZAM DSC)	° F/°C	291	144
	Glass Transition (LZAM DSC)	° F/°C	(11)	(24)

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Recommended Starting Extrusion Temperature Profile:

	°F /°C
Zone 1	340-350° F (166-177° C)
Zone 2	340-360° F (170-182° C)
Zone 3	350-370° F (177-188° C)
Zone 4	360-380° F (182-193° C)
Adapter	360-380° F (182-193° C)
Die Zone 1	360-380° F (182-193° C)
Die Zone 2	350-370° F (177-188° C)

Screens: 20-40-80-20 (mesh sizes)

Feed Throat Cooling: Yes

Screw Cooling: No

Screw RPM: 15-40

Pre-Drying: 2-4 hrs. @ 180°F by Hopper Dryer (Target Moisture Level = Below 0.03%)

RECOMMENDED LUBRICANT PACKAGE: Estane MBA200T for use with MVT 90 NT1 for Oeko Tex® Compliance.

For further information refer to Lubrizol Advanced Materials processing guides.

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