Estane® MVT 90 NT1 TPU

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

	Test Method		***Results***
Permeability Moisture Vapor Transmission* 1 mil (25 microns) film g/m²/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* 1 mil (25 microns) film	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

	Test Method		***Results***	
Physical Properties* 30 mil films	**Hardness** (ASTM D2240)	Shore	90A	
	Specific Gravity (ASTM D-792)	g/cm²	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)

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.