

Tecobax™ TPU

Type: Medical grade Aliphatic Polyether-based Thermoplastic Polyurethanes (TPUs)

Features: Highly resilient, non-softening, resists yellowing from aging and sterilization, offers good mechanical properties, and can be color-matched.

Process: Extrusion and injection molding

Products & Properties	Test Method	TB-25D	TB-40D	TB-45D
Physical				
Specific Gravity, g/mL	ASTM D 792	1.02	1.13	1.13
Mechanical				
Durometer Hardness, Shore	ASTM D 2240	24D	40D	47D
Tensile Modulus	ASTM D 412			
100% Elongation, MPa (psi)		3.4 (500)	8.3 (1200)	10.6 (1500)
200% Elongation, MPa (psi)		4.2 (600)	9.9 (1400)	12.9 (1900)
300% Elongation, MPa (psi)		5.7 (800)	13.6 (1950)	18.2 (2600)
Ultimate Tensile Strength, MPa (psi)	ASTM D 412	34.5 (5000)	53.1 (7700)	55.8 (8100)
Ultimate Elongation, %	ASTM D 412	800	700	650
Flexural Modulus, MPa (psi)	ASTM D 790	27.6 (4000)	82 (11900)	123.4 (17900)
Thermal				
Glass Transition (T _g), °C (°F)	ASTM D 3418	-70 (-94)	-68 (-90)	-65 (-85)
Melt Temperature (T _m), °C (°F)	ASTM D 3418	115 (240)	150 (300)	160 (320)
Vicat Softening Point (120°C/hr, 9.8N), °C (°F)	ASTM D 1525	64 (150)	108 (225)	136 (275)

Note: This information should not be used for establishing engineering or manufacturing guidelines or specifications. These test results are based on small samples of Tecobax™ polyurethanes and do not necessarily represent average results from larger test samples.

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HANDLING CONSIDERATIONS

Properties of all thermoplastic polyurethane products in the molten state are adversely affected by moisture. For best results, always dry the material in a machine mounted dehumidifying dryer [a desiccant dryer delivering air at 1 liter/sec/ kg at -40°C dew point (1 cfm/lb at -40°F dew point)] per the conditions in the table below. A dehumidifying dryer hopper or one shot loader is also recommended. Depending on the applied processing technique, the maximum resin moisture level should be 0.05%. Never exceed 260°C (500°F) melt temperature.

Processing Conditions:

- Tecobax™ TPU's can be processed on any conventional extruder or molder.

Recommended Starting Temperature Profile:

	TB-25D	TB-40D	TB-45D
Recommended Drying Temperature, °C (°F)	4-8 hours: 65 (150) 8-18 hours: 55 (135)	4-8 hours: 82 (180) 8-18 hours: 65 (150)	4-8 hours: 82 (180) 8-18 hours: 65 (150)
Recommended Melt Temperature (Extrusion), °C (°F)	172-188 (340-370)	172-188 (340-370)	172-188 (340-370)
Recommended Melt Temperature (Molding), °C (°F)	160-170 (320-338)	160-180 (320-356)	160-180 (320-356)
Recommended Mold Temperature, °C (°F)	15 (60)	15 (60)	15 (60)

For further information refer to Lubrizol Advanced Materials processing guides.
<https://www.lubrizol.com/Life-Sciences/Literature/Medical-Device-Literature>

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