

## Ensinger Tecast Vekton™ 6PA Black Unfilled Cast Nylon 6 (PA6)

Category : Polymer , Thermoplastic , Nylon , Nylon 6 , Nylon 6 , Cast

### Material Notes:

Tecast® 6PA Black is a black cast nylon that is more UV resistant than natural nylon 6. General Tecast® Cast Nylon Information: Tecast cast nylon, available in a variety of grades, offers a combination of good mechanical properties, excellent bearing and wear characteristics, and the large-size capabilities of the casting process. Its fatigue resistance, noise damping ability, corrosion resistance, and light weight make Tecast ideal for metal replacement applications, such as bearings, gears, sheaves, and sprockets. At one-eighth the weight of bronze, Tecast is easier to handle and maintain than metals such as iron, aluminum, brass, and bronze, which it typically replaces in industrial wear applications. Other materials that Tecast commonly replaces because of its superior performance are laminated phenolics, elastomers, and wood. Tecast has excellent wear and abrasion resistance, resulting in extended component life and lower maintenance cost. Its formulations are readily available in rod, plate, and tube. Nonstandard shapes, such as rings, discs, and blocks can be economically produced in small quantities with short lead times. Custom parts can be cast-size or near-net-shape with relatively inexpensive tooling.

General Tecast® Application Information: Its unique combination of strength, wear resistance, toughness, machinability, and corrosion resistance make Tecast cast nylon ideal for bearings, thrust washers, bushings, wear pads, sheaves, rollers, gears, sprockets, and wheels. Tecast is commonly used in construction equipment, material handling systems, amusement park rides, pulp and paper processing equipment, steel mills and industrial equipment. Information supplied by Ensinger, Inc.

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_Ensinger-Tecast-Vekton-6PA-Black-Unfilled-Cast-Nylon-6-PA6.php](http://www.lookpolymers.com/polymer_Ensinger-Tecast-Vekton-6PA-Black-Unfilled-Cast-Nylon-6-PA6.php)

Physical Properties	Metric	English	Comments
Density	1.15 - 1.16 g/cc	0.0416 - 0.0419 lb/in <sup>3</sup>	ASTM D792
Water Absorption	1.2 %	1.2 %	at 24 hours; ASTM D570

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell R	115	115	ASTM D785
Tensile Strength, Yield	68.9 MPa	10000 psi	ASTM D638
Elongation at Break	25 %	25 %	ASTM D638
Tensile Modulus	2.41 GPa	350 ksi	ASTM D638
Flexural Strength	86.2 MPa	12500 psi	ASTM D790
Flexural Modulus	2.41 GPa	350 ksi	ASTM D790
Izod Impact, Notched	0.320 J/cm	0.600 ft-lb/in	ASTM D256
Coefficient of Friction, Dynamic	0.26	0.26	40 psi, 50 fpm; ASTM D3702
K (wear) Factor	403 x 10 <sup>-8</sup> mm <sup>3</sup> /N-M	200 x 10 <sup>-10</sup> in <sup>3</sup> -min/ft-lb-hr	40 psi, 50 fpm; ASTM D3702

Thermal Properties	Metric	English	Comments
CTE, linear	72.0 $\mu\text{m}/\text{m}\cdot^{\circ}\text{C}$	40.0 $\mu\text{in}/\text{in}\cdot^{\circ}\text{F}$	ASTM D696
	@Temperature 20.0 $^{\circ}\text{C}$	@Temperature 68.0 $^{\circ}\text{F}$	
Specific Heat Capacity	1.67 $\text{J}/\text{g}\cdot^{\circ}\text{C}$	0.400 $\text{BTU}/\text{lb}\cdot^{\circ}\text{F}$	
Thermal Conductivity	0.241 $\text{W}/\text{m}\cdot\text{K}$	1.67 $\text{BTU}\cdot\text{in}/\text{hr}\cdot\text{ft}^2\cdot^{\circ}\text{F}$	
Melting Point	220 $^{\circ}\text{C}$	428 $^{\circ}\text{F}$	ASTM D2133
Maximum Service Temperature, Air	93.3 $^{\circ}\text{C}$	200 $^{\circ}\text{F}$	Long Term; ASTM UL746B
	149 $^{\circ}\text{C}$	300 $^{\circ}\text{F}$	Intermittent
Deflection Temperature at 0.46 MPa (66 psi)	188 $^{\circ}\text{C}$	370 $^{\circ}\text{F}$	ASTM D648
Deflection Temperature at 1.8 MPa (264 psi)	93.3 $^{\circ}\text{C}$	200 $^{\circ}\text{F}$	ASTM D648
Flammability, UL94	HB	HB	

Electrical Properties	Metric	English	Comments
Volume Resistivity	1.00e+14 $\text{ohm}\cdot\text{cm}$	1.00e+14 $\text{ohm}\cdot\text{cm}$	ASTM D257
Dielectric Constant	3.7	3.7	ASTM D150
	@Frequency 60 Hz	@Frequency 60 Hz	
Dielectric Strength	3.7	3.7	50% RH; ASTM D150
	@Frequency 60 Hz	@Frequency 60 Hz	
Dielectric Strength	19.7 $\text{kV}/\text{mm}$	500 $\text{kV}/\text{in}$	ASTM D149
Dissipation Factor	0.0020	0.0020	ASTM D150
	@Frequency 60 Hz	@Frequency 60 Hz	

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