

TENAX® SHORT CARBON FIBERS

Tenax® short carbon fibers provide good process-ability, resin compatibility, and translation of mechanical and electrical properties. Compounds containing short carbon fibers provide higher heat distortion temperatures, and superior thermal conductivity compared to the unreinforced polymers. Chopped fibers for use in **thermoplastics** are typically 6mm in length and are suitable for use with all types of automatic fiber feeding systems as well as batch pre-blends. Chopped fiber grades for use with **thermoset** resins have been designed to readily disperse into thermosetting systems under low shear mixing conditions. **Water dispersible** grades of Tenax® fiber are offered in chopped lengths ranging from 3mm to 25mm which are designed for use in any water based slurry type application. **Milled carbon fibers** are random, short-length fibers suitable for use in all resins and aqueous dispersion systems. The aspect ratio of individual fibers is sufficient to provide both mechanical reinforcement and electrical conductivity to polymer compounds. Additionally, components reinforced with milled carbon fibers have improved dimensionally stable. Typical applications include electronic chip carrier trays, conductive flooring, and business machine components. Toho Tenax reserves the right to upgrade manufacturing processes and raw materials without notice, in compliance with our emphasis on continuous product improvement.

Typical Continuous Fiber Properties	Inch-Pound	SI
Tensile Strength*	630 Ksi	4,344 MPa
Tensile Modulus*	32.7 Msi	225 GPa
Ultimate Elongation*	1.9 %	1.9 %
Density	0.065 lb/in ³	1.82 g/cm ³
Filament Shape	Round	Round
Filament Diameter	0.28 x 10 ⁻³ in	7 µm
Electrical Resistivity		1,380 µΩ-cm
 Chopped Fibers		
Physical Form	Dictated by the fiber length, sizing level, and sizing type	
Fiber Length	1/8, 1/4, 1/2, 1 in	3, 6, 12, 25 mm
Bulk Density	Dictated by the fiber length, sizing level, and sizing type	
Moisture Content	<0.3 %	
Sizing Content	Dependent on the fiber length, fiber grade, and end use	
 Milled Fibers		
Physical Form	Dry, random length, free flowing fiber	
Fiber Length (Average)	2.36, 3.94 x 10 ⁻³ in	60, 100 µm

*Toho Tenax Impregnated Strand Test Method. Based on JIS R7601.

These fibers are controlled by the U.S. Export Administration Regulation and are classified as 1C990 unless otherwise noted. Diversion contrary to U.S. law is prohibited.

To the best of our knowledge the information contained in this publication is accurate; however, we do not assume any liability whatsoever for the accuracy or completeness of such information. Moreover, there is a need to reduce human exposure to many materials to the lowest practical limits in view of possible long-term adverse effects. To the extent that any hazards may have been mentioned in this publication, we neither suggest nor guarantee that such hazards are the only ones which exist. Final determination of the suitability of any information or product for the use contemplated by any user, the matter of that use and whether any infringement of patents is the sole responsibility of the user. We recommend that anyone intending to rely on any recommendation or to use any equipment or processing technique or material mentioned in this publication should satisfy himself as to such suitability and that he can meet all applicable safety and health standards. We strongly recommend that users seek and adhere to the manufacturers' or suppliers' current instructions for handling each material they use.

Product Selection Guide

Applications	Chopped Product		*Milled Product	
	Nomenclature	Typical Bulk Density (g/l)	Nomenclature	Bulk Density (g/l)
Thermoplastics – ABS, LCP, PA, PC, PBT, PET, POM, PPO	Tenax®-A HT C493 6mm	550	Tenax®-A HT M100 100mu Tenax®-A HT M100 60mu	300 550
Thermoplastics (High Temperature)PEEK, PEI, PPS, PSU, PPSU, LCP	Tenax®-A HT C723 6mm	500		
Thermosets – Epoxy, Vinylester, Polyester, Phenolic	Tenax®-A HT C251 6mm **	450		
Water soluble sizings for aqueous dispersion systems	Tenax®-A HT C124 3mm	350		
	Tenax®-A HT C124 6mm	350		
	Tenax®-A HT C124 12mm	300		
	Tenax®-A HT C124 25mm	250		
EMI / RFI shielding applications	Tenax®-J HT C903 6mm	400		

*Milled fibers are not sized

** At the time of June 29, 2010, Tenax®-A HT C251 6mm is classified as 1C010 (a) by the U.S. Export Administration Regulation.

AMERICAS

Toho Tenax America, Inc.
121 Cardiff Valley Road
Rockwood
TN 37854 USA
Tel (800) 252-3001 or (865) 354-8408
<http://www.tohotenaxamerica.com>

ASIA

Toho Tenax Co., Ltd.
Kasumigaseki Common Gate West Tower
3-2-1 Kasumigaseki, Chiyoda-ku
Tokyo, Japan
Tel +81 3 3506 6506
<http://www.tohotenax.com>

EUROPE

Toho Tenax Europe GmbH
Kasinostraße 19-21
42103 Wuppertal
Germany
Tel +49 (202) 322339
<http://www.tohotenax-eu.com>

To the best of our knowledge the information contained in this publication is accurate; however, we do not assume any liability whatsoever for the accuracy or completeness of such information. Moreover, there is a need to reduce human exposure to many materials to the lowest practical limits in view of possible long-term adverse effects. To the extent that any hazards may have been mentioned in this publication, we neither suggest nor guarantee that such hazards are the only ones which exist. Final determination of the suitability of any information or product for the use contemplated by any user, the matter of that use and whether any infringement of patents is the sole responsibility of the user. We recommend that anyone intending to rely on any recommendation or to use any equipment or processing technique or material mentioned in this publication should satisfy himself as to such suitability and that he can meet all applicable safety and health standards. We strongly recommend that users seek and adhere to the manufacturers' or suppliers' current instructions for handling each material they use.