

HTS 5631 800/1600tex 12/24K t0/Z10

Tenax®-E HTS 5631 is a family of high strength aerospace grade carbon fibers made in Germany for use as reinforcement in high performance composites. These fibers are produced from poly[acrylonitrile] (PAN) precursor and are surface treated to promote adhesion to organic matrix polymers. Sizing materials based on Polyurethane are applied to aid in handling.

Typical Fiber Properties (Lot Average)		Inch-Pound	SI
Tensile Strength*		625 x 10 ³ psi	4,300 MPa
Tensile Modulus*		34.5 x 10 ⁶ psi	238 GPa
Elongation*		1.8 %	1.8 %
Density		0.064 lb/in ³	1.76 g/cm ³
Linear density without sizing	12K		800 tex 0.80 g/m
	24K		1,600 tex 1.60 g/m
Yield without sizing	12K	620 yd/lb	1,249 m/kg
	24K	310 yd/lb	625 m/kg
Sizing level w/w		1.0 %	
<u>Yarn / Tow Characteristics</u>			
Filament Diameter		7.0 x 10 ⁻⁶ m	
Twist	12K/24K 12K only	t0 Z10	Never Twisted ¼ turns per inch (10 per meter) Z direction
Equivalent Yarn Cross Section 12K/24K		7.04/14.08 x 10 ⁻⁴ in ² (0.455/0.91 mm ²) Nominal	
For Technical Assistance Contact		Toho Tenax America, Inc. 18552 MacArthur Boulevard, Suite 325 Irvine, CA 92612-1232 USA (949) 474-3278 Ext 25	

* Toho Tenax Impregnated Strand Test Method. Based on DIN 29965

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.

RECOMMENDED STORAGE AND SHELF LIFE

A. HTS Carbon Fiber Properties

Filament tensile strength, modulus of elasticity, coefficient of expansion, electric and thermal conductivities and yield are inherent properties of the HTS fiber and have indefinite shelf life.

B. HTS Carbon Fiber Processing

Typically, the original processing characteristics of HTS 5631 sized yarn will be essentially constant for at least one year from date of delivery. The recommended storage conditions are 40°F-77°F (5°C-25°C) and less than 50 percent RH. Direct exposure to sunlight or rain should be avoided. The shrink wrap should not be removed until immediately prior to use.

If the roving is stored at high temperatures and/or high humidity conditions, it may become difficult to process. Roving that stiffens during storage should still be useable. However, a thorough evaluation of the processing characteristics (e.g., resin wet out, spreadability) relative to the customer's operation is strongly recommended.

STANDARD PACKAGING AND SPOOL BUILD

Spool designation	B	H	M
Net Weight (lb)	4.41	8.82	13.23
Tube Length (in)	11.4	11.4	11.4
Tube I.D. (in)	3	3	3
Tube weight (oz)	6.7	6.7	6.7
Stroke (in)	10	10	10
External dia. (in)	5.2 ±0.2	6.3 ±0.25	6.9 ±0.3

The 4kg spool is standard. Other spool sizes may be available to special order. Please consult your sales representative.

Spool designation	B	H	M
Nom. length 12k/24k (yd)	2,700/1,350	5,400/2,700	8,095/4,048
No. spools per carton	12	6	6
Carton weight (lb)	52.9	52.9	52.9
Carton dimensions (in)	24.8 x 20.1 x 11.6 (H)	24.8 x 20.1 x 11.6 (H)	21.7 x 14.6 x 11.6 (H)
Pallet dimensions (in)	40.6 x 50.8 x 41.5 (H)	40.6 x 50.8 x 41.5 (H)	44.9 x 31.9 x 37.2 (H)
Approx. Pallet weight (lb)	635	635	635

12-14 cartons per pallet. Height of pallet included in dimensions.

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