

TORAYCA™ M46J High Modulus Carbon Fiber Data Sheet



Toray Composite Materials America, Inc.

PRODUCT NOTES

M46J carbon fiber is an MJ-type high modulus fiber with enhanced tensile and compressive strength as compared to M series fibers. Manufactured in Japan and France.

PRODUCT DESIGNATION

FIBER TYPE	TWIST	FILAMENT COUNT	SIZING TYPE	SURFACE TREATMENT	SIZING AMOUNT
M46J	B*	12,000	5	0	B

* B: Untwisted

FIBER PROPERTIES

PROPERTY	ENGLISH	METRIC	METHOD
Tensile Strength 6K	609 Ksi	4,200 MPa	TY-030B-01
Tensile Strength 12K	583 Ksi	4,020 MPa	TY-030B-01
Tensile Modulus	63.3 Msi	436 GPa	TY-030B-01
Strain at Failure 6K		1.0%	TY-030B-01
Strain at Failure 12K		0.9%	TY-030B-01
Density		1.84 g/cm ³	TY-030B-02
Filament Diameter		5 μm	
Yield	6K	223 g/1000m	TY-030B-03
	12K	445 g/1000m	TY-030B-03

FUNCTIONAL PROPERTIES

PROPERTY	VALUE
CTE	-0.9 α ·10 ⁻⁶ /°C
Specific Heat	0.719 J/g ·°C
Thermal Conductivity	0.836 J/cm ·s·°C
Electric Resistivity	0.9 x 10 ⁻³ Ω·cm
Chemical Composition: Carbon	>99%
Na + K	<50 ppm

RESIN SYSTEM COMPATIBILITY

SIZING TYPE & AMOUNT	RESIN SYSTEM COMPATIBILITY	METHOD
50B (1.0 %)	Epoxy, phenolic, polyester, vinyl ester	TY-030B-05

COMPOSITE PROPERTIES

PROPERTY	ENGLISH	METRIC	METHOD
Tensile Strength*	318 Ksi	2,190 MPa	ASTM D3039
Tensile Modulus*	39 Msi	267 GPa	ASTM D3039
Tensile Strain		0.83%	ASTM D3039
Compressive Strength*	158 Ksi	1,090 MPa	SACMASRM1R-94
Flexural Strength*	206 Ksi	1,420 MPa	ASTM D790
Flexural Modulus*	32 Msi	222 GPa	ASTM D790
ILSS	12 Ksi	82.8 MPa	SACMASRM8R-94
In Plain Shear Strength	11 Ksi	77 MPa	ASTM D3518
90° Tensile Strength	7 Ksi	48 MPa	ASTM D3039

*Normalized to 60% fiber volume. Cured with #2500 epoxy at 130 °C.

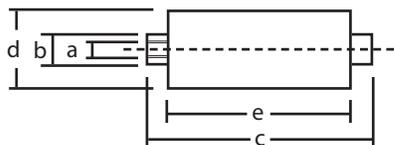
PACKAGING

The table below summarizes the tow sizes, twists, sizing types, and packaging available for standard material. Other bobbin sizes may be available on a limited basis.

TOW SIZES	BOBBIN NET WEIGHT (kg)	BOBBIN TYPE	BOBBIN SIZE (mm)					SPOOL PER CASE	CASE NET WEIGHT (kg)
			a	b	c	d	e		
6K	1.0	II	76	82	192	126	156	20	20
12K	2.0	II	76	82	192	157	156	12	24

Bobbin Type:

Type II



Please refer to SDS for handling and disposal.

The data listed herein are lot averages, for reference purposes only, and are offered AS-IS without warranty. The results are not intended for specification purposes. WARNING: This document may contain technical data whose export is restricted by the Export Administration Act of 1979, as amended, Title 50, U.S.C., App.2401 et seq. Violations of these export laws are subject to severe criminal penalties.

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