

# TORAYCA™ M40J High Modulus Carbon Fiber Data Sheet



Toray Composite Materials America, Inc.

## PRODUCT NOTES

M40J 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
M40J	B*	12,000	5	0	B

\* B: Untwisted

## FIBER PROPERTIES

PROPERTY	ENGLISH	METRIC	METHOD
Tensile Strength	640 Ksi	4,400 MPa	TY-030B-01
Tensile Modulus	54.7 Msi	377 GPa	TY-030B-01
Strain at Failure		1.2%	TY-030B-01
Density		1.77 g/cm <sup>3</sup>	TY-030B-02
Filament Diameter		5 μm	
Yield	6K	225 g/1000m	TY-030B-03
	12K	450 g/1000m	TY-030B-03

## FUNCTIONAL PROPERTIES

PROPERTY	VALUE
CTE	-0.73 α · 10 <sup>-6</sup> /°C
Specific Heat	0.723 J/g ·°C
Thermal Conductivity	0.389 J/cm ·s·°C
Electric Resistivity	1.1 x 10 <sup>-3</sup> 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*	363 Ksi	2,500 MPa	ASTM D3039
Tensile Modulus*	33 Msi	226 GPa	ASTM D3039
Tensile Strain		1.11%	ASTM D3039
Compressive Strength*	184 Ksi	1,270 MPa	SACMASRM1R-94
Flexural Strength*	226 Ksi	1,560 MPa	ASTM D790
Flexural Modulus*	28 Msi	190 GPa	ASTM D790
ILSS	12 Ksi	83.1 MPa	SACMASRM8R-94
In Plain Shear Strength	18 Ksi	123 MPa	ASTM D3518
90° Tensile Strength	9 Ksi	63 MPa	ASTM D3039

\* Normalized to 60% fiber volume. Cured with #2592 epoxy at 130 °C.

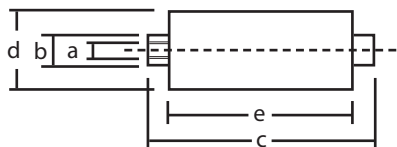
## PACKAGING

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	2.0	II	76	82	192	126	156	12	24
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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