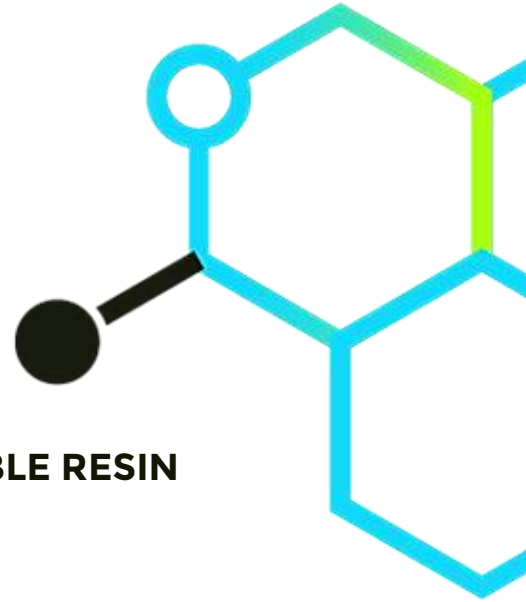


Technical Datasheet

T50B

CARBON NANOTUBE DISPERSION IN UV-CURABLE RESIN
BLACK



T50B

T50B is a concentrated dispersion of discrete, dispersed, and functionalized carbon nanotubes (D'Func) in UV-curable resins. This material can be used in SLA, DLP, or jettable resins ranging from rigid to flexible to provide conductivity and decreased surface resistance. ESD resins produced with T50 can achieve uniform conductivity with high resolution and isotropic mechanical properties.

Advantages



- Tunable surface resistance $10^5 - 10^{11} \Omega$
- Easy addition to a formula without high shear mixing
- Stable dispersion of discrete CNTs

Industries



- Additive Manufacturing

Applications



- ESD resins for vat photopolymerization

EXAMPLE FORMULATION

Component	Control	T50B	Units
BR-541MB	49.00	49.00	%
TEGDMA	39.20	29.40	%
EOEOEA	9.80	9.80	%
T50B	0.00	9.80	%
TPO	2.00	2.00	%
OB	0.01	0.00	%
Viscosity, [cps] at 25°C*	285	358	%

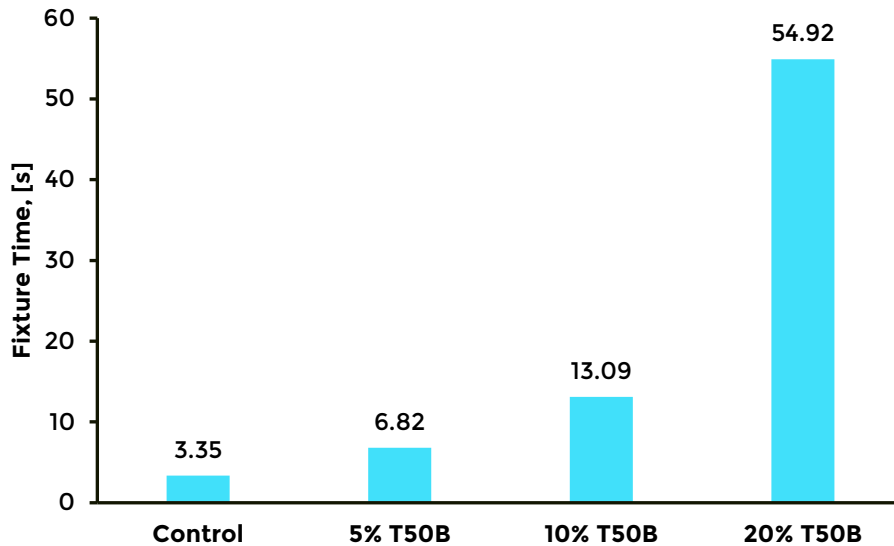
*Brookfield - CAP 2000+ @ 25°C



PROPERTIES

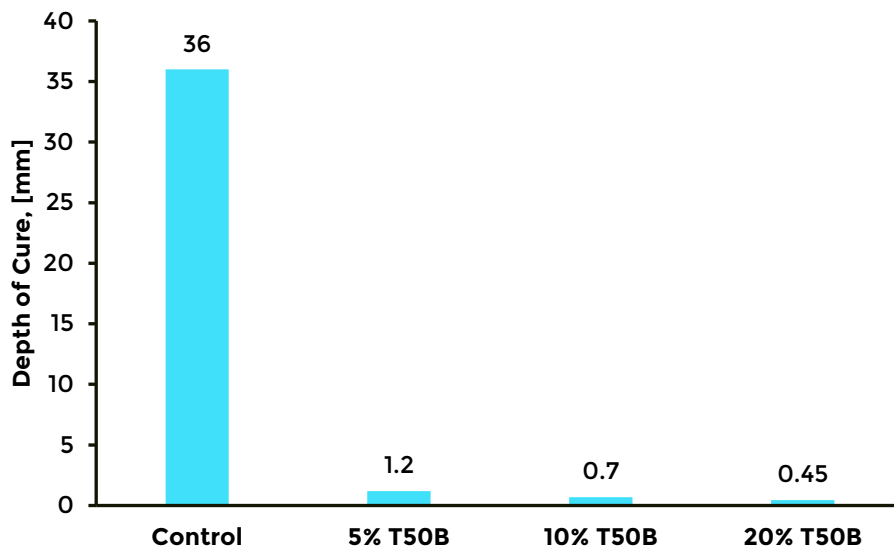
FIXTURE TIME

Cure speed measured on an HR-2 hybrid rheometer while curing with a 405nm LED at 100mW/cm². Fixture time is considered the time it takes for the material to develop 1MPa of complex modulus.



DEPTH OF CURE

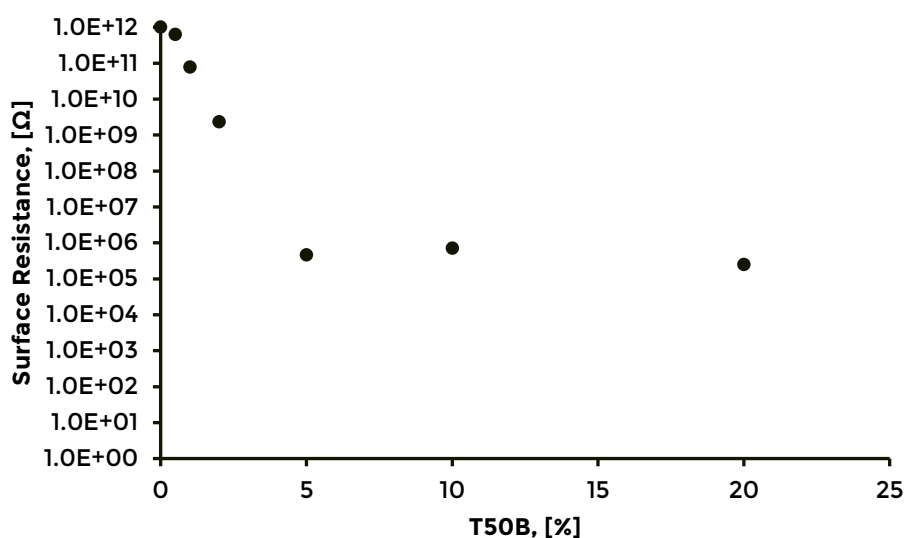
Depth of cure is measured by curing resins with EC-5000, 200 mW/cm² and 11.5 J/cm².



CURED MECHANICAL PROPERTIES

Property	Control	10% T50B	Units	Method
Ultimate Tensile Strength	18.6	26.9	MPa	ASTM D 882
Tensile Modulus	537.8	827.4	MPa	ASTM D 882
Elongation	25.0	18.0	%	ASTM D 882
Durometer Hardness	76D	77D	**	**
MEK Double Rubs (#)	17	13	**	**

SURFACE RESISTANCE CURVE



UNCURED PROPERTIES

Property	Values	Units	Conditions
Viscosity	Thixotropic paste	cps	25°C
Appearance	Black paste	**	**
Refractive Index	0	**	25°C
Specific Gravity	1.06	**	20°C

Notes: This product is intended for industrial use only.

Disclaimer: The data contained in this document is based on our current knowledge and experience. The performance of the product may vary with processing conditions, operating conditions, application, or with end use. Mechnano, LLC makes no warranties, expressed or implied, regarding the accuracy of these results with regards to system or end application.

