Material data of our SIGRAFIL® continuous carbon fiber tows

Typical properties	Units	C T50-4.0/240-E100	C T50-4.4/255-E100	C T50-4.8/280-E100	C T24-5.0/270-E100
Number of filaments		50k	50k	50k	24k
Fineness of yarn dry	tex (g/1000 m)	3300	3420	3070	1600
Density	g/cm³	1.80	1.78	1.78	1.79
Single filament diameter	µm	6.8	7.0	6.6	6.9
Tensile strength	GPa	4.0	4.4	4.8	5.0
Tensile modulus	GPa	240	255	280	270
Elongation at break	%	1.70	1.65	1.65	1.90
Single filament resistivity	µΩm	15	17	16	14
Sizing type		epoxy	epoxy	epoxy	epoxy
Sizing content	%	1.0	1.0	1.0	1.0

Enhanced performance by sizing
By applying different types of sizing, the carbon fibers can be optimally matched to different matrix systems. In this way, it is possible to produce application-tailored versions as well as the standard materials. So, together with our customers, we find optimized solutions for their challenges.

Sizing types for our SIGRAFIL® continuous carbon fiber tows

Sizing type	Thermoset matrix	Thermoplastic matrix	Matrix compatibility	Sizing content [%]
E100	●		Epoxy, polyurethane, phenol, vinyl ester	1.0
V100	●		Vinyl ester (and all radical-based curing systems), unsaturated polyester, epoxy	1.3
UN	●	●	Epoxy, phenolic, vinyl ester, polyurethane, polycarbonate, polyester, polysulfone, cyanate ester, polyamide, BMI, PESU, PEEK, PEKK, PVC, polyimide	0.0
T115		●	Polypropylene	0.9
T140		●	Polyamide (up to 300°C), polyurethane, polyester	0.6
T150		●	PA-RIM process (in-situ polymerization of caprolactam, e.g. reactive PA processing)	0.2

Nomenclature

SIGRAFIL C T50-4.4/255-E100
1 | 2 | 3 | 4 | 5 | 6

1	Brand name	SIGRAFIL
2	Material	C = carbon
3	Type	T = Continuous tow
4	Number of filaments	50 = 50 000
5	Mechanical properties	Tensile strength/elastic modulus in GPa
6	Sizing type	E100 = epoxy