MITSUBISHI CHEMICAL

MITSUBISHI CHEMICAL CORPORATION
Carbon Fiber & Composites

Carbon Chopped Fiber & Milled Fiber (Short Fiber)

Carbon Chopped Fiber is a product made by chopping carbon fiber tow. Carbon Milled Fiber is a product made by milling chopped fiber into a powder (milled) form. Chopped fiber is typically around 3 to 6 mm long, while milled fiber is typically less than 200 μm long. Both of these materials are used to enhance the physical properties of thermoplastic resins and rubbers, and to increase electrical and thermal conductivity.

PYROFIL™ Chopped Fiber

Product name	Carbon fiber type	Sizing agent	Sizing content (%)	Fiber length (mm)	Material properties (reference)						
					Tensile strength (GPa)	Tensile modulus (GPa)	Elongation (%)	Thermal conductivity (W/mK)	Electrical resistivity [μΩm]	Density (g/cm³)	Fiber diameter (μm)
TR06U	PAN 24t (regular tow)	Urethane-based	2.5	6	3.73	224	2.1	7	16	1.81	7
TR066A	PAN 24t (regular tow)	Epoxy-based	3.0	6	3.73	224	2.1	7	16	1.81	7
TR03CM	PAN 24t (regular tow)	Water	12.0	3	3.73	224	2.1	7	16	1.81	7
TR03M	PAN 24t (regular tow)	Water-soluble polyamide-based	1.5	3	3.73	224	2.1	7	16	1.81	7
TR06UL	PAN 24t (large tow)	Urethane-based	2.5	6	3.30	225	1.7	7	16	1.82	7
TR06NL	PAN 24t (large tow)	Polyamide-based	3.0	6	3.30	225	1.7	7	16	1.82	7
TR06YL	PAN 24t (large tow)	Special epoxy-based	4.2	6	3.30	225	1.7	7	16	1.82	7
TR03ML	PAN 24t (large tow)	Water-soluble polyamide-based	2.5	3	3.30	225	1.7	7	16	1.82	7
TR03CL	PAN 24t (large tow)	Water	1.2	3	3.30	225	1.7	7	16	1.82	7
MR03NE	PAN 30t	Polyamide-based	3.0	3	4.40	265	2.0	16	13	1.82	5

https://www.m-chemical.co.jp/carbon-fiber/en/product/mid/

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DIALEAD™ Chopped Fiber

Product name	Carbon fiber type	Sizing agent	Sizing content (%)	Fiber length (mm)	Material properties (reference)						
					Tensile strength (GPa)	Tensile modulus (GPa)	Elongation (%)	Thermal conductivity (W/mK)	Electrical resistivity [μΩm]	Density (g/cm³)	Fiber diameter (μm)
K223SE	PITCH 20t	Polyamide-based	3.0-5.0	6	2.40	185	1.1	20	15.0	2.0	11
K237SE	PITCH 65t	Polyamide-based	1.0-3.0	6	2.60	640	0.4	140	6.6	2.1	11
K223HE	PITCH 90t	nil	nil	6	3.80	900	0.3	550	2.3	2.2	11
K6371T	PITCH 65t	Epoxy-based	1.0-3.0	6	2.60	640	0.4	140	6.6	2.1	11

DIALEAD™ Milled fiber (High rigidity and high thermal conductivity grade)

Product name	Carbon fiber type	Sizing agent	Sizing content (%)	Fiber length (mm)	Material properties (reference)						
					Tensile strength (GPa)	Tensile modulus (GPa)	Elongation (%)	Thermal conductivity (W/mK)	Electrical resistivity [μΩm]	Density (g/cm³)	Fiber diameter (μm)
K223HM	PITCH 90t	nil	nil	0.05/0.2	3.80	900	0.3	550	2.3	2.2	11

DIALEAD™ Milled fiber (Antistatic grade)

Product name	Carbon fiber type	Sizing agent	Sizing content (%)	Cut length (mm)	Surface resistivity* (Ω/sq)
K223EM	PITCH	nil	nil	0.2	$10^{7.5}$

* Surface resistivity: Measurement of milled product aggregate. The figures in this table are typical values and not imply any kind of guarantee.

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