

# QUANTUM COMPOSITES

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## MATERIAL SUMMARY

Material Reference	Fiber % w/w	Fiber Length (inches / mm) & Type	Description	Features / Benefits /Applications
<b>Hybridized Polyester - Fiberglass E Grade</b>				
QC-7810FR	58%	0.5 / 13 E glass	Flame retardant UL94 V-0 at 3mm	Electrical applications
QC-8777	38%	1 / 25 E glass	Low density 1.3 specific gravity	Lightweighting (Automotive sunroof surround)
QC-8800	63%	1 / 25 E glass	High impact / toughness	General purpose structural, prosthetics, marine, automotive, safety, industrial. Color & flame retardant versions available.
<b>Vinyl Ester - Fiberglass E Grade</b>				
QC-8560	60%	0.5 / 13 E glass	Higher heat resistant Vinyl Ester	High temp auto, industrial. Lower cost Aero / Mil
QC-8700	63%	1 / 25 E glass	Increased temperature resistant over the QC-8800	General purpose structural, prosthetics, marine, automotive, industrial, safety. Color & flame retardant versions available.
QC-8705-1	65%	Continuous E glass	Unidirectional fiberglass for co-molding with chopped materials such as QC-8700	Used for localized strength reinforcement, prosthetics, auto, industrial.
<b>Vinyl Ester - Carbon Fiber - PAN based std modulus</b>				
AMC-8590	53%	1 / 25 12K	Workhorse of AMC carbon fiber offerings	Structural automotive, inner panels, brackets, etc. Sporting goods, golf clubs, bicycle components, medical. Designed for structural applications requiring high stiffness and high strength, particularly open- and filled-hole tension and compression.
AMC-8590HT	53%	1 / 25 12K	Increased heat resistance over AMC-8590	
AMC-8590-12CFH	51%	1 / 25 12K & E glass	Hybrid fiber blend, cost / performance option	
AMC-8592	53%	2 / 51 12K	2" fiber alternative to above	
AMC-8593	50%	1 / 25 3K	Offering highest properties and lowest COV	
AMC-8593HT	50%	1 / 25 3K	Increased heat resistance over AMC-8593	
AMC-8575	55%	Bi-Directional 12K	Woven 2 x 2 twill bi-directional reinforcement	
AMC-8595	55%	Continuous 60K	Unidirectional for co-molding with chopped carbon fiber AMC materials	
<b>Epoxy - Fiberglass E grade</b>				
Lytex 9063	63%	0.5 / 13 E glass	Lytex 9063 is specified by numerous aero and military OEMs. Short cure time for complex geometry molded parts solutions.	Aerospace secondary and tertiary components, fairings, brackets, etc. Industrial, high temperature / high pressure. Suitable for molding thick cross sections (3" +). Flame retardant & low density versions available.
Lytex 4084	63%	1 / 25 E glass		
Lytex 4129	63%	0.5 / 13 E glass		
<b>Epoxy - Carbon Fiber - PAN based std modulus</b>				
Lytex 4149	55%	1 / 25 3K	Lytex 4149 is specified by numerous aero & military OEMs	Aerospace secondary and tertiary structures, components, fairings, brackets, panels. Advantages of Lytux resin system with light weight and stiffness of carbon fiber. Flame retardant version available.
Lytex 4197	55%	2 / 51 3K	2" fiber version of Lytux 4149	
Lytex 4181	55%	1 / 25 12K	12K carbon fiber	
<b>Phenolic - Fiberglass E grade</b>				
QC-2150	50%	1 / 25 E glass	FAR 25.853 (FST) compliant	Interior of mass transit (air, rail, etc.)
QC-2150 LD	25%	1 / 25 E glass	Low density - FAR 25.853 (FST) compliant	Interior of mass transit (air, rail, etc.), used for crush-core molding. Co-molding with phenolic prepreg.
QC-2550	50%	1 / 25 E glass	Flame Smoke & Toxicity (FST) properties	Industrial, low flammability elevated temp applications
QC-2560	57%	1 / 25 E glass	Excellent retention of properties at elevated temperatures	High temperature / high pressure applications
<b>Phenolic - Carbon Fiber - PAN based std modulus</b>				
AMC-2593	45%	1 / 25 3K	FAR 25.853 (FST) compliant	Structures for aircraft interiors & mass transit
<b>Bismaleimide (BMI) - Fiberglass E grade</b>				
HTC-9510	52%	1 / 25 E glass	High temperature composite, Tg > 375°C	High temperature / high pressure, industrial, aero
<b>Bismaleimide (BMI) - Carbon Fiber - PAN based std modulus</b>				
HTC-9593	55%	1 / 25 3K	High temperature composite, Tg > 375°C	High temperature / high pressure, industrial, aero

## MATERIAL SUMMARY (cont'd.)

Material Reference	SG	Flexural Modulus D-790 Net Shape / Machined		Flexural Strength D-790 Net Shape / Machined		Tensile Modulus D-638 Net Shape / D-3039 Machined		Tensile Strength D-638 Net Shape / D-3039 Machined		Glass Transition Temp Tan Delta	
		g / cc	10 <sup>6</sup> psi	GPa	ksi	MPa	10 <sup>6</sup> psi	GPa	ksi	MPa	F°
<b>Hybridized Polyester - Fiberglass E Grade</b>											
QC-7810FR	1.83	2.8 / -	19 / -	70 / -	483 / -	3.3 / -	23 / -	44 / -	304 / -	257	125
QC-8777	1.30	1.6 / -	11 / -	34 / -	235 / -	1.6 / -	11 / -	15 / -	104 / -	-	-
QC-8800	1.88	2.9 / 2.9	20 / 20	80 / 71	552 / 485	3.5 / 2.8	24 / 19	50 / 36	345 / 245	-	-
<b>Vinyl Ester - Fiberglass E Grade</b>											
QC-8560	1.89	3.1 / 2.9	21 / 20	72 / 62	497 / 424	3.4 / 3.0	23 / 21	41 / 31	283 / 210	329	165
QC-8700	1.85	3.2 / 3.0	22 / 21	87 / 70	600 / 483	3.2 / 2.9	22 / 20	49 / 35	338 / 242	260	127
QC-8705-1	1.95	NA / 6.0	NA / 41	NA / 190	NA / 1311	NA / 6.0	NA / 41	NA / 120	NA / 828	260	127
<b>Vinyl Ester - Carbon Fiber - PAN based std modulus</b>											
AMC-8590	1.48	5.2 / 4.1	36 / 28	90 / 65	621 / 448	9.0 / 5.3	62 / 37	40 / 24	276 / 162	288	142
AMC-8590HT	1.48	5.9 / 3.8	41 / 26	82 / 54	565 / 372	10.0 / 4.6	69 / 32	40 / 20	276 / 137	347	175
AMC-8590-12CFH	1.58	3.4 / 2.5	23 / 17	70 / 51	483 / 352	5.0 / 3.1	35 / 21	40 / 26	276 / 179	288	142
AMC-8592	1.48	5.7 / 3.8	32 / 26	92 / 61	634 / 420	10.0 / 5.5	69 / 38	55 / 37	379 / 255	288	142
AMC-8593	1.47	6.5 / 4.5	45 / 31	115 / 73	794 / 504	9.5 / 5.2	66 / 36	61 / 42	421 / 290	288	142
AMC-8593HT	1.47	6.2 / 4.5	43 / 31	98 / 72	676 / 497	10.0 / 5.5	69 / 38	52 / 39	359 / 269	347	175
AMC-8575	1.45	NA / 5.0	NA / 35	NA / 57	NA / 393	NA / 6.0	NA / 41	NA / 63	NA / 435	288	142
AMC-8595	1.45	NA / 11.3	NA / 78	NA / 190	NA / 1311	NA / 13.7	NA / 95	NA / 144	994	288	142
<b>Epoxy - Fiberglass E grade</b>											
Lytex 9063	1.82	2.6 / 2.6	18 / 18	66 / 59	455 / 407	3.3 / 2.6	23 / 18	35 / 28	242 / 193	329	165
Lytex 4084	1.85	2.8 / -	19 / -	69 / -	476 / -	- / -	- / -	39 / -	269 / -	329	165
Lytex 4129	1.82	2.4 / -	17 / -	64 / -	442 / -	- / -	- / -	38 / -	262 / -	-	-
<b>Epoxy - Carbon Fiber - PAN based std modulus</b>											
Lytex 4149	1.48	5.0 / 4.6	35 / 32	89 / 77	614 / 531	8.0 / 5.0	55 / 35	43 / 32	297 / 221	329	165
Lytex 4197	1.48	7.2 / 4.6	50 / 32	107 / 80	738 / 552	11.0 / 5.0	76 / 35	42 / 37	290 / 255	329	165
Lytex 4181	1.48	5.5 / 4.3	38 / 30	71 / 53	490 / 366	7.8 / 4.6	54 / 32	25 / 17	173 / 117	329	165
<b>Phenolic - Fiberglass E grade</b>											
QC-2150	1.82	3.0 / -	21 / -	52 / -	359 / -	- / -	- / -	33 / -	228 / -	392	200
QC-2150 LD	1.25	1.2 / -	8 / -	17 / -	117 / -	1.2 / -	8 / -	8 / -	55 / -	392	200
QC-2550	1.80	2.8 / -	19 / -	57 / -	393 / -	3.0 / -	21 / -	34 / -	235 / -	392	200
QC-2560	1.82	3.2 / -	22 / -	65 / -	449 / -	4.0 / -	28 / -	35 / -	242 / -	482	250
<b>Phenolic - Carbon Fiber - PAN based std modulus</b>											
AMC-2593	1.55	6.5 / 4.2	45 / 29	72 / 56	497 / 386	9.0 / 5.1	62 / 35	36 / 24	248 / 166	484	251
<b>Bismaleimide (BMI) - Fiberglass E grade</b>											
HTC-9510	1.82	4.0 / 2.6	28 / 18	94 / 53	649 / 366	4.0 / -	28 / -	35 / 25	242 / 173	700	371
<b>Bismaleimide (BMI) - Carbon Fiber - PAN based std modulus</b>											
HTC-9593	1.55	7.0 / 4.8	48 / 33	75 / 54	518 / 373	9.0 / 5.4	62 / 37	26 / 22	179 / 152	714	379

Note: The above cured properties are for both "Net Shape" and "Machined" specimens to respective test methods. Net shape specimens produce higher mechanical properties than machined specimens due to favorable fiber orientation in net shape molding. Established engineering practices use machined specimen data for structural analysis. Net shape specimen data represent best case, pristine properties.

Additional technical information and data on these materials are available from Quantum Composites, Inc. Please contact us via phone, local representative, web site [www.quantumcomposites.com](http://www.quantumcomposites.com) or email [info@quantumcomposites.com](mailto:info@quantumcomposites.com).