COMPOSITE ENVISIONS

FIBER PROPERTY COMPARISION - ADVANCED														
		PolyesterHT	***Twaron***	***Kevlar 29***	***Kevlar 49***	***Basalt***	***Carbon(PAN) Standard Modulus***	***Carbon(PAN) Intermediate Modulus***	***Carbon(PAN) High Modulus***	***E-Glass***	***S-Glass***	***UHMWPE***	***Zylon***	***Innegra***
Density	g/cm³	1.44	1.44	1.44	1.44	2.70	1.76	1.78	1.82	2.54	2.48	0.97	1.50	0.84
Tensile Strength	Mpa	580 - 900	2400 - 3600	2600	3620	4840	3530	5313	4410	2600	4800	2200 - 3900	1560	667
Modulus	Gpa	45 - 90	60 - 120	61	154	89	230	292	375	72	65 - 132	65 - 132	270	15
Elongation at Break	%	3.60	3.30	3.60	2.40	3.20	1.5	1.80	1.1	4.00	5.50	3.50	2.50	9.50
UV Resistance		Fair	Poor	Poor	Poor	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Very Good	Poor	Very Good
Solvent Resistance		Good	Fair	Fair	Fair	Excellent	Very Good	Very Good	Very Good	Very Good	Very Good	Excellent	Excellent	Excellent
Moisture Absorption	%	Excellent	3.2 - 7.0	4.5 - 7.0	3.50	0.2 - 12.0	0.00	0.00	0.00	0.10	0.10	<0.1	0.60	<0.1
Max Process Temp	°C	320	650	450	550	980	3500	3500	3500	730	850	140	650	150
Dielectric Constant (Dk)		20	3.40	3.20	3.20	2.0 - 3.2	Conductive	Conductive	Conductive	6.20	5.20	2.25	3.00	2.20
Dissipation Factor (Df)		0.002 - 0.003	0.014 - 0.01	0.014 - 0.01	0.014 - 0.01	0.003 - 0.015	Conductive	Conductive	Conductive	0.003 - 0.004	0.002	0.0002	0.001	0.0009
Coefficient of Linear Thermal Expansion	X10-6 m/m/°K	-9.20	-4.90	-4.90	-4.90	8.00	-0.41	-0.56	-0.40	5.40	2.90	-12.00	6.00	-8.00

*This information is not guaranteed to be accurate, however it is to be used as a general quick tool for estimating between material types.