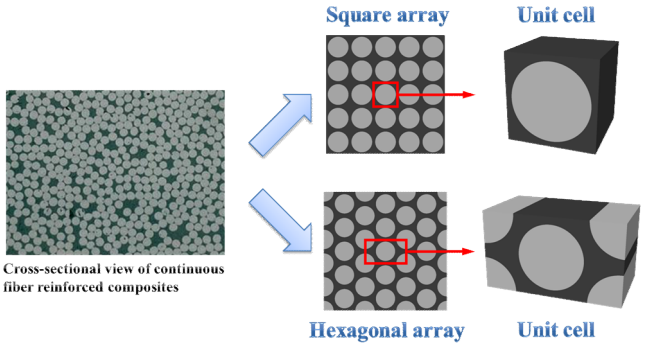
■ Theory

Representative elementary volume (RVE) is the smallest volume over which a measurement can be made that will yield a value representative of the whole. In the case of periodic materials, one simply chooses a periodic unit cell (which, however, may be non-unique), but in random media, the situation is much more complicated.



Cross-sectional view of continuous fiber reinforced composites

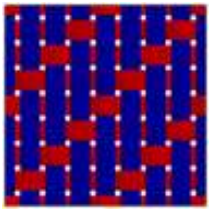
■ Material properties

☐ Weave

Brand	SK Chemical
Pattern	Woven
Fiber material	Carbon
Lay up type	Multi layer

☐ Material properties

Property	Unit	Value
E-Modulus	GPa	116
Poisson's ratio	-	0.28
Density	g/mm^3	1.84

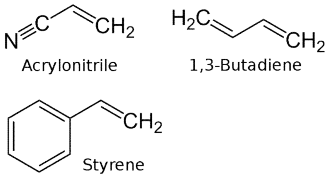


☐ Resin

Type	Peek

☐ Material properties

Property	Unit	Value
E-Modulus	MPa	535
Poisson's ratio	-	0.29
Density	g/mm^3	1.55

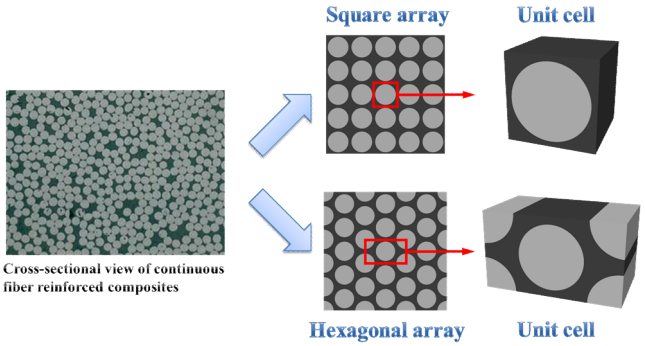


■ Property according to direction(XYZ)

No.	Symbol	Properties	Unit	Value	Notes
1	ρ	Density	g/mm^3	2.087E-09	-
2	E_1	Young's Modulus X	MPa	163394	Longitudinal modulus
3	E_2	Young's Modulus Y	MPa	10439.24	Transverse Modulus
4	E_3	Young's Modulus Z	MPa	11256.224	-
5	ν_{12}	Poisson's ratio XY	MPa	0.4128075	-
6	ν_{13}	Poisson's ratio YZ	MPa	0.479643	-
7	ν_{23}	Poisson's ratio XZ	MPa	0.290232	-
8	G_{12}	Shear Modulus XY	MPa	4789.113	In-plane shear modulus
9	G_{13}	Shear Modulus YZ	MPa	3876.901	Out-of-plane shear modulus
10	G_{23}	Shear Modulus XZ	MPa	5489.555	Out-of-plane shear modulus
11	S_{11T}	Longitudinal Tensile strength	MPa	3606.339	Strain: 0.03%
12	S_{11C}	Longitudinal Compressive strength	MPa	-4341.612	Strain: 0.03%
13	S_{22T}	Transverse Tensile strength	MPa	3022.863	Strain: 0.03%
14	S_{22C}	Transverse compressive strength	MPa	-326.796	Strain: 0.03%
15	S_{33T}	Tensile strength	MPa	307.7329	Strain: 0.03%
16	S_{33C}	Compressive strength	MPa	-307.7329	Strain: 0.03%
17	S_{12S}	Out-of-plane shear strength	MPa	134.0244	-
18	S_{23S}	Shear strength	MPa	121.5306	-
19	k	Thermal conductivity	W/m·K	482.303	
20	C_p	Specific heat	kJ/kg·K	474.165	

■ Theory

Representative elementary volume (RVE) is the smallest volume over which a measurement can be made that will yield a value representative of the whole. In the case of periodic materials, one simply chooses a periodic unit cell (which, however, may be non-unique), but in random media, the situation is much more complicated.



Cross-sectional view of continuous fiber reinforced composites

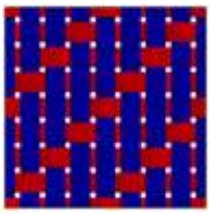
■ Material properties

☐ Weave

Brand	SK Chemical
Pattern	Woven
Fiber material	Carbon
Lay up type	Multi layer

☐ Material properties

Property	Unit	Value
E-Modulus	GPa	125
Poisson's ratio	-	0.27
Density	g/mm^3	1.5

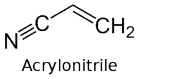


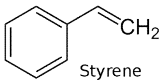
☐ Resin

Type	Peek

☐ Material properties

Property	Unit	Value
E-Modulus	GPa	362
Poisson's ratio	-	0.29
Density	g/mm^3	1.53



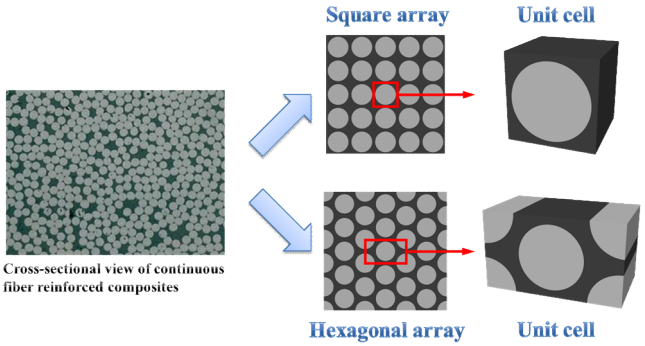


■ Property according to direction(XYZ)

No.	Symbol	Properties	Unit	Value	Notes
1	ρ	Density	g/mm^3	2.030E-09	-
2	E_1	Young's Modulus X	MPa	158725.6	Longitudinal modulus
3	E_2	Young's Modulus Y	MPa	12708.64	Transverse Modulus
4	E_3	Young's Modulus Z	MPa	11347	-
5	ν_{12}	Poisson's ratio XY	MPa	0.581862	-
6	ν_{13}	Poisson's ratio YZ	MPa	0.4521225	-
7	ν_{23}	Poisson's ratio XZ	MPa	0.2466972	-
8	G_{12}	Shear Modulus XY	MPa	4398.165	In-plane shear modulus
9	G_{13}	Shear Modulus YZ	MPa	3257.9	Out-of-plane shear modulus
10	G_{23}	Shear Modulus XZ	MPa	4921.67	Out-of-plane shear modulus
11	S_{11T}	Longitudinal Tensile strength	MPa	4096.521	Strain: 0.03%
12	S_{11C}	Longitudinal Compressive strength	MPa	-4166.547	Strain: 0.03%
13	S_{22T}	Transverse Tensile strength	MPa	3186.261	Strain: 0.03%
14	S_{22C}	Transverse compressive strength	MPa	-403.0484	Strain: 0.03%
15	S_{33T}	Tensile strength	MPa	378.5387	Strain: 0.03%
16	S_{33C}	Compressive strength	MPa	-343.1358	Strain: 0.03%
17	S_{12S}	Out-of-plane shear strength	MPa	138.5676	-
18	S_{23S}	Shear strength	MPa	139.7034	-
19	k	Thermal conductivity	W/m·K	458.5275	
20	C_p	Specific heat	kJ/kg·K	516.57	

■ Theory

Representative elementary volume (RVE) is the smallest volume over which a measurement can be made that will yield a value representative of the whole. In the case of periodic materials, one simply chooses a periodic unit cell (which, however, may be non-unique), but in random media, the situation is much more complicated.



Cross-sectional view of continuous fiber reinforced composites

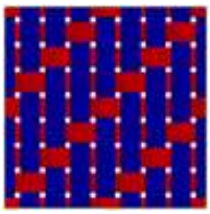
■ Material properties

☐ Weave

Brand	SK Chemical
Pattern	Woven
Fiber material	Carbon
Lay up type	Multi layer

☐ Material properties

Property	Unit	Value
E-Modulus	GPa	102
Poisson's ratio	-	0.3
Density	g/mm^3	1.76

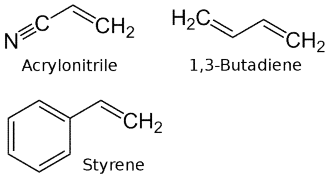


☐ Resin

Type	Peek

☐ Material properties

Property	Unit	Value
E-Modulus	MPa	541
Poisson's ratio	-	0.29
Density	g/mm^3	1.53

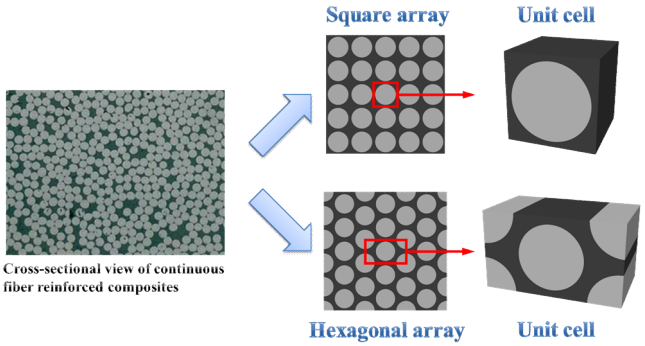


■ Property according to direction(XYZ)

No.	Symbol	Properties	Unit	Value	Notes
1	ρ	Density	g/mm^3	2.073E-09	-
2	E_1	Young's Modulus X	MPa	136550.7	Longitudinal modulus
3	E_2	Young's Modulus Y	MPa	12254.76	Transverse Modulus
4	E_3	Young's Modulus Z	MPa	13616.4	-
5	ν_{12}	Poisson's ratio XY	MPa	0.4678485	-
6	ν_{13}	Poisson's ratio YZ	MPa	0.5150265	-
7	ν_{23}	Poisson's ratio XZ	MPa	0.2733018	-
8	G_{12}	Shear Modulus XY	MPa	3714.006	In-plane shear modulus
9	G_{13}	Shear Modulus YZ	MPa	4072.375	Out-of-plane shear modulus
10	G_{23}	Shear Modulus XZ	MPa	5300.26	Out-of-plane shear modulus
11	S_{11T}	Longitudinal Tensile strength	MPa	4621.716	Strain: 0.03%
12	S_{11C}	Longitudinal Compressive strength	MPa	-3571.326	Strain: 0.03%
13	S_{22T}	Transverse Tensile strength	MPa	2777.766	Strain: 0.03%
14	S_{22C}	Transverse compressive strength	MPa	-400.3251	Strain: 0.03%
15	S_{33T}	Tensile strength	MPa	294.1164	Strain: 0.03%
16	S_{33C}	Compressive strength	MPa	-315.9028	Strain: 0.03%
17	S_{12S}	Out-of-plane shear strength	MPa	155.6046	-
18	S_{23S}	Shear strength	MPa	157.8762	-
19	k	Thermal conductivity	W/m·K	482.303	
20	C_p	Specific heat	kJ/kg·K	385.5	

■ Theory

Representative elementary volume (RVE) is the smallest volume over which a measurement can be made that will yield a value representative of the whole. In the case of periodic materials, one simply chooses a periodic unit cell (which, however, may be non-unique), but in random media, the situation is much more complicated.



Cross-sectional view of continuous fiber reinforced composites

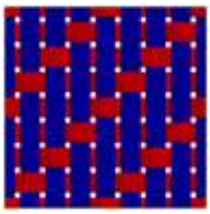
■ Material properties

☐ Weave

Brand	SK Chemical
Pattern	Woven
Fiber material	Carbon
Lay up type	Multi layer

☐ Material properties

Property	Unit	Value
E-Modulus	GPa	116
Poisson's ratio	-	0.26
Density	g/mm^3	1.52

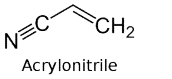


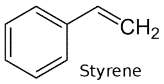
☐ Resin

Type	Peek

☐ Material properties

Property	Unit	Value
E-Modulus	GPa	458
Poisson's ratio	-	0.28
Density	g/mm^3	1.89





■ Property according to direction(XYZ)

No.	Symbol	Properties	Unit	Value	Notes
1	ρ	Density	g/mm^3	1.987E-09	-
2	E_1	Young's Modulus X	MPa	165728.2	Longitudinal modulus
3	E_2	Young's Modulus Y	MPa	10983.896	Transverse Modulus
4	E_3	Young's Modulus Z	MPa	13616.4	-
5	ν_{12}	Poisson's ratio XY	MPa	0.5543415	-
6	ν_{13}	Poisson's ratio YZ	MPa	0.5150265	-
7	ν_{23}	Poisson's ratio XZ	MPa	0.3579528	-
8	G_{12}	Shear Modulus XY	MPa	3779.164	In-plane shear modulus
9	G_{13}	Shear Modulus YZ	MPa	4626.218	Out-of-plane shear modulus
10	G_{23}	Shear Modulus XZ	MPa	4656.657	Out-of-plane shear modulus
11	S_{11T}	Longitudinal Tensile strength	MPa	4061.508	Strain: 0.03%
12	S_{11C}	Longitudinal Compressive strength	MPa	-4796.781	Strain: 0.03%
13	S_{22T}	Transverse Tensile strength	MPa	3431.358	Strain: 0.03%
14	S_{22C}	Transverse compressive strength	MPa	-345.8591	Strain: 0.03%
15	S_{33T}	Tensile strength	MPa	294.1164	Strain: 0.03%
16	S_{33C}	Compressive strength	MPa	-373.0921	Strain: 0.03%
17	S_{12S}	Out-of-plane shear strength	MPa	156.7404	-
18	S_{23S}	Shear strength	MPa	152.1972	-
19	k	Thermal conductivity	W/m·K	400.787	
20	C_p	Specific heat	kJ/kg·K	458.745	

■ Theory

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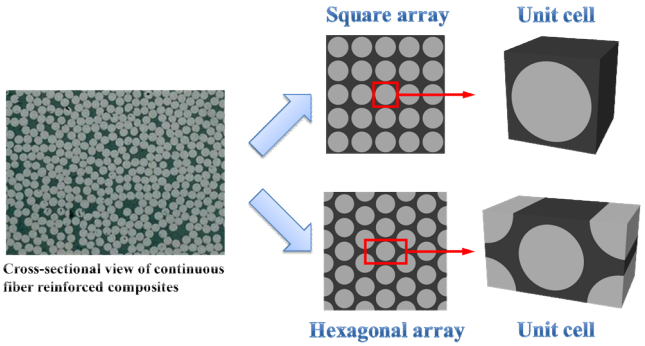


Cross-sectional view of continuous fiber reinforced composites

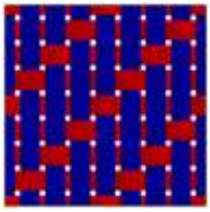
■ Material properties

☐ Weave

Brand	SK Chemical
Pattern	Woven
Fiber material	Carbon
Lay up type	Multi layer

☐ Material properties

Property	Unit	Value
E-Modulus	GPa	128
Poisson's ratio	-	0.3
Density	g/mm^3	1.71

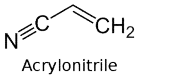


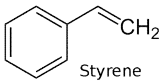
☐ Resin

Type	Peek

☐ Material properties

Property	Unit	Value
E-Modulus	MPa	367
Poisson's ratio	-	0.3
Density	g/mm^3	1.52





■ Property according to direction(XYZ)

No.	Symbol	Properties	Unit	Value	Notes
1	ρ	Density	g/mm^3	2.102E-09	-
2	E_1	Young's Modulus X	MPa	123712.6	Longitudinal modulus
3	E_2	Young's Modulus Y	MPa	13616.4	Transverse Modulus
4	E_3	Young's Modulus Z	MPa	9531.48	-
5	ν_{12}	Poisson's ratio XY	MPa	0.5543415	-
6	ν_{13}	Poisson's ratio YZ	MPa	0.5857935	-
7	ν_{23}	Poisson's ratio XZ	MPa	0.253953	-
8	G_{12}	Shear Modulus XY	MPa	4365.586	In-plane shear modulus
9	G_{13}	Shear Modulus YZ	MPa	4593.639	Out-of-plane shear modulus
10	G_{23}	Shear Modulus XZ	MPa	5678.85	Out-of-plane shear modulus
11	S_{11T}	Longitudinal Tensile strength	MPa	4761.768	Strain: 0.03%
12	S_{11C}	Longitudinal Compressive strength	MPa	-4621.716	Strain: 0.03%
13	S_{22T}	Transverse Tensile strength	MPa	3758.154	Strain: 0.03%
14	S_{22C}	Transverse compressive strength	MPa	-288.6698	Strain: 0.03%
15	S_{33T}	Tensile strength	MPa	386.7086	Strain: 0.03%
16	S_{33C}	Compressive strength	MPa	-277.7766	Strain: 0.03%
17	S_{12S}	Out-of-plane shear strength	MPa	130.617	-
18	S_{23S}	Shear strength	MPa	159.012	-
19	k	Thermal conductivity	W/m·K	461.924	
20	C_p	Specific heat	kJ/kg·K	427.905	

■ Theory

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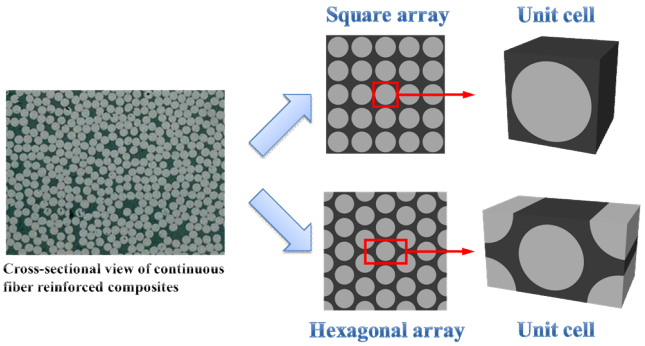


Cross-sectional view of continuous fiber reinforced composites

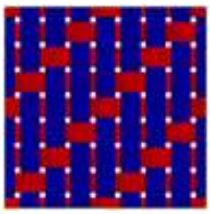
■ Material properties

☐ Weave

Brand	SK Chemical
Pattern	Woven
Fiber material	Carbon
Lay up type	Multi layer

☐ Material properties

Property	Unit	Value
E-Modulus	GPa	117
Poisson's ratio	-	0.28
Density	g/mm^3	1.74

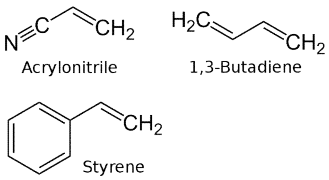


☐ Resin

Type	Peek

☐ Material properties

Property	Unit	Value
E-Modulus	MPa	458
Poisson's ratio	-	0.29
Density	g/mm^3	1.57

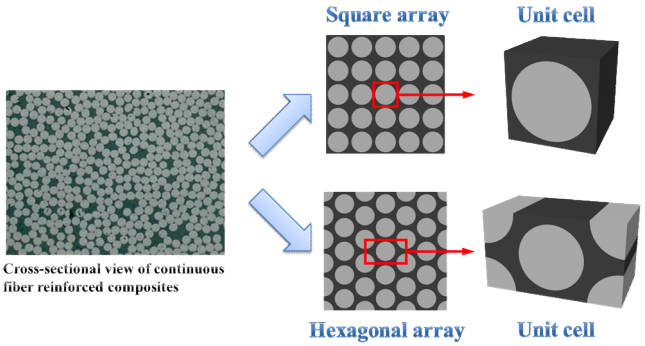


■ Property according to direction(XYZ)

No.	Symbol	Properties	Unit	Value	Notes
1	ρ	Density	g/mm^3	1.801E-09	-
2	E_1	Young's Modulus X	MPa	116710	Longitudinal modulus
3	E_2	Young's Modulus Y	MPa	11891.656	Transverse Modulus
4	E_3	Young's Modulus Z	MPa	9531.48	-
5	ν_{12}	Poisson's ratio XY	MPa	0.4363965	-
6	ν_{13}	Poisson's ratio YZ	MPa	0.581862	-
7	ν_{23}	Poisson's ratio XZ	MPa	0.3434412	-
8	G_{12}	Shear Modulus XY	MPa	4723.955	In-plane shear modulus
9	G_{13}	Shear Modulus YZ	MPa	4561.06	Out-of-plane shear modulus
10	G_{23}	Shear Modulus XZ	MPa	3785.9	Out-of-plane shear modulus
11	S_{11T}	Longitudinal Tensile strength	MPa	4271.586	Strain: 0.03%
12	S_{11C}	Longitudinal Compressive strength	MPa	-4306.599	Strain: 0.03%
13	S_{22T}	Transverse Tensile strength	MPa	3458.591	Strain: 0.03%
14	S_{22C}	Transverse compressive strength	MPa	-373.0921	Strain: 0.03%
15	S_{33T}	Tensile strength	MPa	299.563	Strain: 0.03%
16	S_{33C}	Compressive strength	MPa	-375.8154	Strain: 0.03%
17	S_{12S}	Out-of-plane shear strength	MPa	164.691	-
18	S_{23S}	Shear strength	MPa	146.5182	-
19	k	Thermal conductivity	W/m·K	410.9765	
20	C_p	Specific heat	kJ/kg·K	462.6	

■ Theory

Representative elementary volume (RVE) is the smallest volume over which a measurement can be made that will yield a value representative of the whole. In the case of periodic materials, one simply chooses a periodic unit cell (which, however, may be non-unique), but in random media, the situation is much more complicated.



Cross-sectional view of continuous fiber reinforced composites

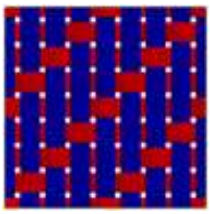
■ Material properties

☐ Weave

Brand	SK Chemical
Pattern	Woven
Fiber material	Carbon
Lay up type	Multi layer

☐ Material properties

Property	Unit	Value
E-Modulus	GPa	119
Poisson's ratio	-	0.26
Density	g/mm^3	1.86

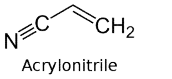


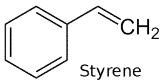
☐ Resin

Type	Peek

☐ Material properties

Property	Unit	Value
E-Modulus	MPa	553
Poisson's ratio	-	0.25
Density	g/mm^3	1.86



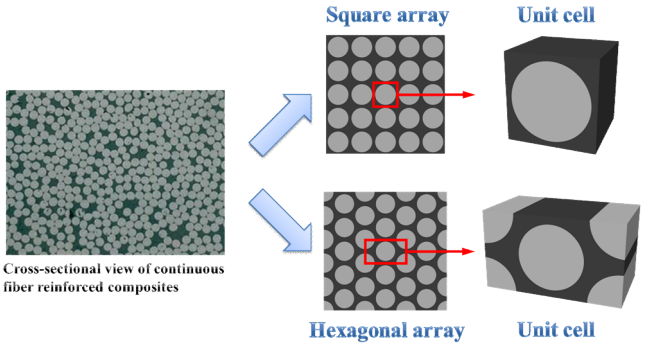


■ Property according to direction(XYZ)

No.	Symbol	Properties	Unit	Value	Notes
1	ρ	Density	g/mm^3	1.573E-09	-
2	E_1	Young's Modulus X	MPa	117877.1	Longitudinal modulus
3	E_2	Young's Modulus Y	MPa	12163.984	Transverse Modulus
4	E_3	Young's Modulus Z	MPa	13344.072	-
5	ν_{12}	Poisson's ratio XY	MPa	0.4206705	-
6	ν_{13}	Poisson's ratio YZ	MPa	0.4285335	-
7	ν_{23}	Poisson's ratio XZ	MPa	0.2829762	-
8	G_{12}	Shear Modulus XY	MPa	3714.006	In-plane shear modulus
9	G_{13}	Shear Modulus YZ	MPa	4626.218	Out-of-plane shear modulus
10	G_{23}	Shear Modulus XZ	MPa	5375.978	Out-of-plane shear modulus
11	S_{11T}	Longitudinal Tensile strength	MPa	4621.716	Strain: 0.03%
12	S_{11C}	Longitudinal Compressive strength	MPa	-4971.846	Strain: 0.03%
13	S_{22T}	Transverse Tensile strength	MPa	3458.591	Strain: 0.03%
14	S_{22C}	Transverse compressive strength	MPa	-275.0533	Strain: 0.03%
15	S_{33T}	Tensile strength	MPa	326.796	Strain: 0.03%
16	S_{33C}	Compressive strength	MPa	-337.6892	Strain: 0.03%
17	S_{12S}	Out-of-plane shear strength	MPa	145.3824	-
18	S_{23S}	Shear strength	MPa	137.4318	-
19	k	Thermal conductivity	W/m·K	349.8395	
20	C_p	Specific heat	kJ/kg·K	562.83	

■ Theory

Representative elementary volume (RVE) is the smallest volume over which a measurement can be made that will yield a value representative of the whole. In the case of periodic materials, one simply chooses a periodic unit cell (which, however, may be non-unique), but in random media, the situation is much more complicated.



Cross-sectional view of continuous fiber reinforced composites

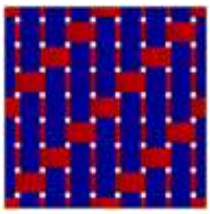
■ Material properties

☐ Weave

Brand	SK Chemical
Pattern	Woven
Fiber material	Carbon
Lay up type	Multi layer

☐ Material properties

Property	Unit	Value
E-Modulus	GPa	101
Poisson's ratio	-	0.26
Density	g/mm^3	1.76

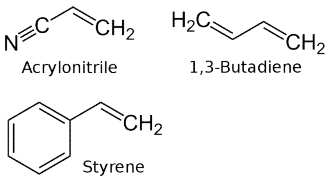


☐ Resin

Type	Peek

☐ Material properties

Property	Unit	Value
E-Modulus	MPa	599
Poisson's ratio	-	0.25
Density	g/mm^3	1.6

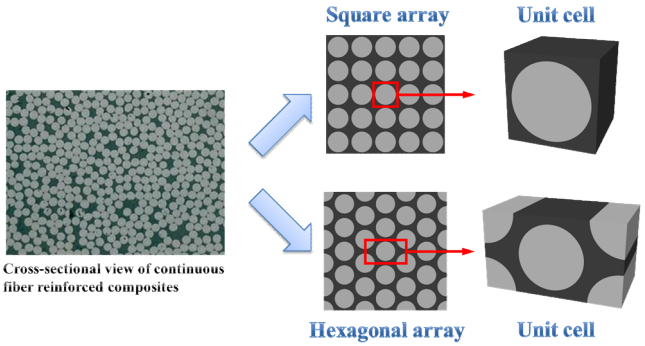


■ Property according to direction(XYZ)

No.	Symbol	Properties	Unit	Value	Notes
1	ρ	Density	g/mm^3	1.959E-09	-
2	E_1	Young's Modulus X	MPa	149388.8	Longitudinal modulus
3	E_2	Young's Modulus Y	MPa	9894.584	Transverse Modulus
4	E_3	Young's Modulus Z	MPa	12254.76	-
5	ν_{12}	Poisson's ratio XY	MPa	0.518958	-
6	ν_{13}	Poisson's ratio YZ	MPa	0.424602	-
7	ν_{23}	Poisson's ratio XZ	MPa	0.3361854	-
8	G_{12}	Shear Modulus XY	MPa	4137.533	In-plane shear modulus
9	G_{13}	Shear Modulus YZ	MPa	4756.534	Out-of-plane shear modulus
10	G_{23}	Shear Modulus XZ	MPa	4997.388	Out-of-plane shear modulus
11	S_{11T}	Longitudinal Tensile strength	MPa	4691.742	Strain: 0.03%
12	S_{11C}	Longitudinal Compressive strength	MPa	-4131.534	Strain: 0.03%
13	S_{22T}	Transverse Tensile strength	MPa	2804.999	Strain: 0.03%
14	S_{22C}	Transverse compressive strength	MPa	-294.1164	Strain: 0.03%
15	S_{33T}	Tensile strength	MPa	397.6018	Strain: 0.03%
16	S_{33C}	Compressive strength	MPa	-356.7523	Strain: 0.03%
17	S_{12S}	Out-of-plane shear strength	MPa	162.4194	-
18	S_{23S}	Shear strength	MPa	145.3824	-
19	k	Thermal conductivity	W/m·K	417.7695	
20	C_p	Specific heat	kJ/kg·K	555.12	

■ Theory

Representative elementary volume (RVE) is the smallest volume over which a measurement can be made that will yield a value representative of the whole. In the case of periodic materials, one simply chooses a periodic unit cell (which, however, may be non-unique), but in random media, the situation is much more complicated.



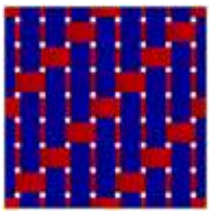
■ Material properties

☐ Weave

Brand	SK Chemical
Pattern	Woven
Fiber material	Carbon
Lay up type	Multi layer

☐ Material properties

Property	Unit	Value
E-Modulus	GPa	102
Poisson's ratio	-	0.28
Density	g/mm^3	1.6

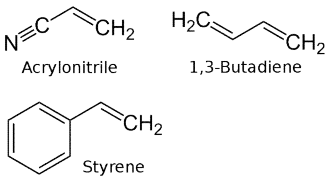


☐ Resin

Type	Peek

☐ Material properties

Property	Unit	Value
E-Modulus	MPa	466
Poisson's ratio	-	0.3
Density	g/mm^3	1.75

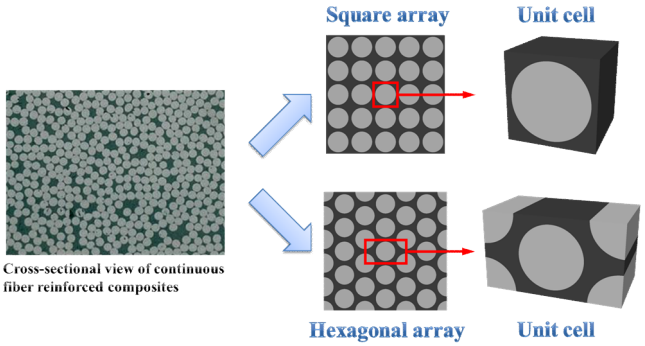


■ Property according to direction(XYZ)

No.	Symbol	Properties	Unit	Value	Notes
1	ρ	Density	g/mm^3	1.844E-09	-
2	E_1	Young's Modulus X	MPa	163394	Longitudinal modulus
3	E_2	Young's Modulus Y	MPa	12073.208	Transverse Modulus
4	E_3	Young's Modulus Z	MPa	9077.6	-
5	ν_{12}	Poisson's ratio XY	MPa	0.440328	-
6	ν_{13}	Poisson's ratio YZ	MPa	0.408876	-
7	ν_{23}	Poisson's ratio XZ	MPa	0.2636274	-
8	G_{12}	Shear Modulus XY	MPa	4333.007	In-plane shear modulus
9	G_{13}	Shear Modulus YZ	MPa	4333.007	Out-of-plane shear modulus
10	G_{23}	Shear Modulus XZ	MPa	4278.067	Out-of-plane shear modulus
11	S_{11T}	Longitudinal Tensile strength	MPa	4131.534	Strain: 0.03%
12	S_{11C}	Longitudinal Compressive strength	MPa	-3501.3	Strain: 0.03%
13	S_{22T}	Transverse Tensile strength	MPa	3404.125	Strain: 0.03%
14	S_{22C}	Transverse compressive strength	MPa	-291.3931	Strain: 0.03%
15	S_{33T}	Tensile strength	MPa	389.4319	Strain: 0.03%
16	S_{33C}	Compressive strength	MPa	-302.2863	Strain: 0.03%
17	S_{12S}	Out-of-plane shear strength	MPa	169.2342	-
18	S_{23S}	Shear strength	MPa	157.8762	-
19	k	Thermal conductivity	W/m·K	502.682	
20	C_p	Specific heat	kJ/kg·K	466.455	

■ Theory

Representative elementary volume (RVE) is the smallest volume over which a measurement can be made that will yield a value representative of the whole. In the case of periodic materials, one simply chooses a periodic unit cell (which, however, may be non-unique), but in random media, the situation is much more complicated.



Cross-sectional view of continuous fiber reinforced composites

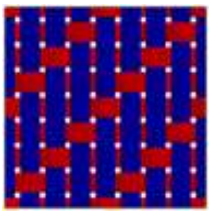
■ Material properties

☐ Weave

Brand	SK Chemical
Pattern	Woven
Fiber material	Carbon
Lay up type	Multi layer

☐ Material properties

Property	Unit	Value
E-Modulus	GPa	120
Poisson's ratio	-	0.28
Density	g/mm^3	1.58

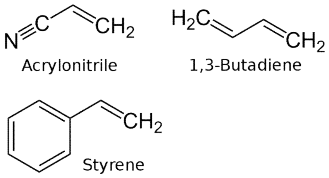


☐ Resin

Type	Peek

☐ Material properties

Property	Unit	Value
E-Modulus	MPa	548
Poisson's ratio	-	0.29
Density	g/mm^3	1.82



■ Property according to direction(XYZ)

No.	Symbol	Properties	Unit	Value	Notes
1	ρ	Density	g/mm^3	1.558E-09	-
2	E_1	Young's Modulus X	MPa	134216.5	Longitudinal modulus
3	E_2	Young's Modulus Y	MPa	9803.808	Transverse Modulus
4	E_3	Young's Modulus Z	MPa	12890.192	-
5	ν_{12}	Poisson's ratio XY	MPa	0.4285335	-
6	ν_{13}	Poisson's ratio YZ	MPa	0.526821	-
7	ν_{23}	Poisson's ratio XZ	MPa	0.2612088	-
8	G_{12}	Shear Modulus XY	MPa	4691.376	In-plane shear modulus
9	G_{13}	Shear Modulus YZ	MPa	4626.218	Out-of-plane shear modulus
10	G_{23}	Shear Modulus XZ	MPa	4429.503	Out-of-plane shear modulus
11	S_{11T}	Longitudinal Tensile strength	MPa	4551.69	Strain: 0.03%
12	S_{11C}	Longitudinal Compressive strength	MPa	-4131.534	Strain: 0.03%
13	S_{22T}	Transverse Tensile strength	MPa	3050.096	Strain: 0.03%
14	S_{22C}	Transverse compressive strength	MPa	-294.1164	Strain: 0.03%
15	S_{33T}	Tensile strength	MPa	299.563	Strain: 0.03%
16	S_{33C}	Compressive strength	MPa	-408.495	Strain: 0.03%
17	S_{12S}	Out-of-plane shear strength	MPa	168.0984	-
18	S_{23S}	Shear strength	MPa	163.5552	-
19	k	Thermal conductivity	W/m·K	475.51	
20	C_p	Specific heat	kJ/kg·K	524.28	