



S-Ply® yellow

Matrix: epoxy resin
Reinforcement: parallel oriented, non-woven glass fibres
Temperature range: -60°C – +120°C
Thickness range: 0.75 – 30.0 mm

Material data

Property at room temperature	Standard spring configuration (see sketch)	Unidirectional (100% oriented lengthwise)	Crossply (50% length- and 50% crossways oriented)
Flexural strength [MPa]	932 ± 5%	1151 ± 5%	760 ± 5%
Tensile strength [MPa]	800 ± 5%	960 ± 5%	480 ± 5%
Compressive strength [MPa]	724 ± 5%	880 ± 5%	690 ± 5%
Modulus of elasticity [MPa]	28,000 ± 5%	38,000 ± 5%	24,000 ± 5%
BARCOL-hardness	70 ± 5%	70 ± 5%	70 ± 5%
Max. bending stress [MPa] (Tensile-compressive-fatigue strength)	138	158	120
Coefficient of friction S-Ply-steel	0.17μ	0.17μ	0.17μ
Coefficient of friction S-Ply-aluminium	0.18μ	0.18μ	0.18μ
Poisson number	0.074	–	–

Chemical properties

Chemicals	Change in weight [%]	Change in thickness [%]	Flexural strength [N/mm ²]
Heptane	+0.02	+0.02	755
Isopropyl alcohol	+0.16	+0.23	720
Ethylene glycol	+0.06	+0.02	750
Jet engine oil	+0.08	-0.14	760
Jet fuel (JP-4)	+0.07	+0.11	760
Hydraulic oil	+0.07	-0.05	760
Sulphuric acid (3%ig)	+0.06	+0.09	690
Sulphuric acid (30%ig)	+0.07	+0.24	695
Sodium hydroxide (1%ig)	+0.19	+0.04	655
Sodium hydroxide (10%ig)	+0.20	+0.12	650
Hydrogen peroxide (3%ig)	+0.21	+0.10	760
Distilled water	+0.17	+0.09	750

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Electrical properties

Property	Conditioned R.H.	Temp. of test	Frequency					
			60Hz	1KHz	100KHz	1MHz	10MHz	30MHz
Dissipation factor	50%	23°C	0.0052	0.006	0.014	0.017	0.016	0.023
	50%	60°C		0.0087				
	50%	120°C		0.0033				
	50%	150°C		0.13				
	90%	23°C	0.036	0.05	0.032	0.019	0.024	0.033
	90%	60°C		0.054				
Dielectric constant	50%	23°C	5.3	5.2	5.1	4.8	4.7	4.4
	50%	60°C		5.7				
	50%	120°C		6.1				
	50%	150°C		7.3				
	90%	23°C	7.0	6.5				
	90%	60°C		6.8				
110V D.C.								
Volume resistivity (ohms x cm)	50%	23°C	4.9 x 10 ¹⁷					
	90%	23°C	4.9 x 10 ¹⁷					
Insulation resistance (ohms)	50%	23°C	5.3 x 10 ¹⁵					
	50%	60°C	2.7 x 10 ¹⁴					
	50%	120°C	6.2 x 10 ¹¹					
	50%	150°C	6.8 x 10 ¹⁰					
	90%	23°C	3.3 x 10 ¹⁴					
	90%	60°C	9.7 x 10 ¹²					
Dielectric strength (V/mm)	50%	23°C	27.2 x 10 ³					

Other properties

	Typical measured value
Density [g/cm ³]	1.8
Colour	yellow-green

Sketch:

Spring configuration

