

## Elektro-Isola G-Etronax EP FR4 Epoxy, Glass Fabric Reinforcement, Light Yellow, Sheets

Category : Polymer , Thermoset , Epoxy , Epoxy, Molded, Glass Fiber Filler

### Material Notes:

Description: Extremely high mechanical strength at moderate temperature. Very good stability of electrical properties under high humidity.

Mechanical, electrical and electronic applications. UL-94 V-0 approved – File No. E222199 Information provided by Elektro-Isola

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_Elektro-Isola-G-Etronax-EP-FR4-Epoxy-Glass-Fabric-Reinforcement-Light-Yellow-Sheets.php](http://www.lookpolymers.com/polymer_Elektro-Isola-G-Etronax-EP-FR4-Epoxy-Glass-Fabric-Reinforcement-Light-Yellow-Sheets.php)

Physical Properties	Metric	English	Comments
Density	1.90 g/cc	0.0686 lb/in <sup>3</sup>	24hr/23°C/50% RH; ISO 1183-A; IEC/EN 60893-2 8.1
Water Absorption	0.13 %	0.13 %	24hr/50°C+24hr in water at 23°C, Test Specimen 50x50x3[mm]; ISO 62-1; IEC/EN 60893-2 8.2

Mechanical Properties	Metric	English	Comments
Tensile Strength	320 MPa @Thickness >=1.50 mm	46400 psi @Thickness >=0.0591 in	24hr/23°C/50% RH; ISO 527; IEC/EN 60893-2 5.6
Modulus of Elasticity	22.0 GPa @Thickness >=1.50 mm	3190 ksi @Thickness >=0.0591 in	24hr/23°C/50% RH; ISO 178; IEC/EN 60893-2 5.2
Flexural Strength	200 MPa @Thickness >=1.50 mm	29000 psi @Thickness >=0.0591 in	1hr/150°C/measured at 150°C; ISO 178; IEC/EN 60893-2 5.1
	450 MPa @Thickness >=1.50 mm	65300 psi @Thickness >=0.0591 in	24hr/23°C/50% RH; ISO 178; IEC/EN 60893-2 5.1
	70.0 MPa @Treatment Temp. 200 °C, Time 3600 sec	10200 psi @Treatment Temp. 392 °F, Time 1.00 hour	ISO 178; IEC/EN 60893-2 5.1
	220 MPa @Treatment Temp. 150 °C, Time 3600 sec	31900 psi @Treatment Temp. 302 °F, Time 1.00 hour	ISO 178; IEC/EN 60893-2 5.1
	280 MPa @Treatment Temp. 100 °C,	40600 psi @Treatment Temp. 212 °F,	ISO 178; IEC/EN 60893-2 5.1

Mechanical Properties	Time 3600 sec Metric	Time 1.00 hour English	Comments
	420 MPa	60900 psi	
	@Treatment Temp. 50.0 °C, Time 3600 sec	@Treatment Temp. 122 °F, Time 1.00 hour	ISO 178; IEC/EN 60893-2 5.1
	470 MPa	68200 psi	
	@Treatment Temp. 20.0 °C, Time 3600 sec	@Treatment Temp. 68.0 °F, Time 1.00 hour	ISO 178; IEC/EN 60893-2 5.1
Compressive Strength	550 MPa	79800 psi	24hr/23°C/50% RH; ISO 604; IEC/EN 60893-2 5.3
	@Thickness >=5.00 mm	@Thickness >=0.197 in	
Shear Strength	55.0 MPa	7980 psi	24hr/23°C/50% RH; IEC/EN 60893-2 5.5
	@Thickness >=5.00 mm	@Thickness >=0.197 in	
Izod Impact, Notched (ISO)	65.0 kJ/m <sup>2</sup>	30.9 ft-lb/in <sup>2</sup>	24hr/23°C/50% RH; ISO 180/2A; IEC/EN 60893-2 5.4.3
	@Thickness >=5.00 mm	@Thickness >=0.197 in	

Thermal Properties	Metric	English	Comments
Maximum Service Temperature, Inert	145 °C	293 °F	IEC 60216; IEC/EN 60893-2 7.1
	@Thickness 0.000 mm, Time 7.20e+7 sec	@Thickness 0.000 in, Time 20000 hour	
Flammability, UL94	V-0	V-0	IEC/EN 60893-2 7.2; IEC 60695-11-10

Electrical Properties	Metric	English	Comments
Insulation Resistance	5.00e+11 ohm	5.00e+11 ohm	24hr/50°C+24h in water at 23°C; IEC 60167; IEC/EN 60893-2 6.3
	@Thickness >=3.00 mm	@Thickness >=0.118 in	
Dielectric Constant	4.5	4.5	96hr/105°C+1hr/23°C/20%RH; IEC 60250; IEC/EN 60893-2 6.2
	@Thickness <=3.00 mm, Frequency 50.0 Hz	@Thickness <=0.118 in, Frequency 50.0 Hz	
	4.5	4.5	96hr/105°C+1hr/23°C/20%RH; IEC 60250; IEC/EN 60893-2 6.2
	@Thickness <=3.00 mm, Frequency 1.00e+6 Hz	@Thickness <=0.118 in, Frequency 1.00e+6 Hz	
Dielectric Strength	2.80 kV/mm	71.1 kV/in	24hr/23°C/50% RH+1hr/oil 90°C; Parallel; IEC 60245-1; IEC/EN 60893-2 6.1.3.2
	@Thickness >=3.00 mm	@Thickness >=0.118 in	
	15.0 kV/mm	381 kV/in	24hr/23°C/50% RH+1hr/oil 90°C; Perpendicular; IEC 60245-1; IEC/EN 60893-2 6.1.3.1
	@Thickness 3.00 mm	@Thickness 0.118 in	

Electrical Properties	Metric	English	Comments
Dissipation Factor	@Frequency 50.0 Hz	@Frequency 50.0 Hz	96hr/105°C+1hr/23°C/20%RH; IEC 60250; IEC/EN 60893-2 6.2
	0.0080	0.0080	96hr/105°C+1hr/23°C/20%RH; IEC 60250; IEC/EN 60893-2 6.2
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	
Comparative Tracking Index	200 V	200 V	IEC 60112; IEC/EN 60893-2 6.4
	@Thickness 3.00 mm	@Thickness 0.118 in	

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