

# NP130

## TECHNICAL DATA BULLETIN

GRADE: NP130

NEMA: FR-4

U.L. LISTED: N

DESCRIPTION: NP130 is a woven glass fabric combined with halogenated epoxy resin system. NP130 is produced to printed circuit board quality standards. It is flame retardant, and meets the requirements of MIL-I-24768/27, Type GEE-F.

### TYPICAL PROPERTIES

		UNITS	VALUE		
			Thickness Tested		
			0.0625"	0.125"	0.500"
<b>PHYSICAL PROPERTIES</b>					
<b>Specific Gravity</b> (ASTM D792)		-			1.80
<b>Rockwell Hardness</b> (ASTM D785)	0.250" Build-up	M Scale	100		
<b>Moisture Absorption</b> (ASTM D570)	Condition A	%	0.10		
<b>Flexural Strength</b> (ASTM D790)	Condition A LW / CW	psi (Mpa)	80,000 / 60,000 (551.6) / (413.7)		
<b>Flexural Modulus</b> (ASTM D790)	Condition A LW / CW	kpsi (Gpa)	2,700 / 2,400 (18.6) / (16.5)		
<b>Tensile Strength</b> (ASTM D638)	Condition A LW / CW	psi (Mpa)		50,000 / 40,000 (344.7) / (275.8)	
<b>Izod Impact Strength</b> (ASTM D256)	Condition A LW / CW	ft-lb/in (J/cm)			15.00 / 12.00 (8.01) / (6.41)
<b>Compressive Strength</b> (ASTM D695)	Condition A Flatwise	psi (Mpa)			70,000 (482.6)
<b>Bonding Strength</b> (ASTM D229)	Condition A	lb (kg)			2,200 (997.9)
<b>Shear Strength</b> (ASTM D732)	Condition A Perpendicular	psi (Mpa)	30,000 (206.8)		

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## TYPICAL PROPERTIES (continued)

	UNITS	VALUE		
		Thickness Tested		
		0.0625"	0.125"	0.500"
<b>THERMAL PROPERTIES</b>				
<b>Temperature Index</b> <sup>1</sup> (UL Bulletin 746b) Electrical / Mechanical	°C	130 / 140		
<b>Coefficient of Thermal Expansion</b> (IPC-TM 650-2.4.24) X-axis / Y-axis	" / °C x10 <sup>-6</sup>	10.0 / 12.0		
<b>Tg by DMA</b>	°C	127		
<b>Flammability Vertical</b> Condition A (UL Bulletin 94)	Class	V-0		
<b>ELECTRICAL PROPERTIES</b>				
<b>Dissipation Factor @ 1 MHz</b> (ASTM D150) Condition A	-			
	Condition D-24/23	-	0.025	
<b>Relative Permittivity @ 1 MHz</b> (ASTM D150) Condition A	-			
	Condition D-24/23	-	4.80	
<b>Breakdown Voltage</b> (ASTM D149) Condition A	kVolts	65		
	Condition D-48/50	kVolts	54	
<b>Electric Strength</b> (ASTM D149) Condition A	Volts/mil (kV/cm)	670 (263.8)		
	Condition D-48/50	Volts/mil (kV/cm)	650 (255.9)	
<b>Arc Resistance</b> (ASTM D495) Condition A	sec	120		
<b>Comparative Tracking Index</b> (ASTM D3638)	Volts	150		

<sup>1</sup> This temperature is a recommendation only, and based upon experience in various applications. The maximum operating temperature is dependent upon the application and should be investigated prior to use.

This data, while believed to be accurate and based on reliable analytical methods, is for informational purposes only. The terms and conditions of the agreement under which it is sold will govern any sales of this product. Data supplied above are "typical values"; not to be considered "specification values".

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Specification writers: Contact Norplex-Micarta for specification values before submission.