

NP511

TECHNICAL DATA BULLETIN

GRADE: NP511

NEMA: G-11

U.L. LISTED: Y

DESCRIPTION: NP511 consists of a woven glass fabric combined with high temperature epoxy resin system. NP511 has excellent mechanical strength and electrical properties from cryogenic to elevated temperatures. Continuous operating temperature is 175°C. This material meets NEMA G-11 and MIL-I-24768/3, Type GEB.

TYPICAL PROPERTIES

		UNITS	VALUE		
			Thickness Tested		
			0.0625"	0.125"	0.500"
PHYSICAL PROPERTIES					
Specific Gravity (ASTM D792)		-			1.80
Rockwell Hardness (ASTM D785)		0.250" Build-up	M Scale	112	
Moisture Absorption (ASTM D570)	Condition A	%	0.20		
Flexural Strength (ASTM D790)	Condition A	psi	68,100 / 61,300		
	LW / CW	(Mpa)	(469.5) / (422.6)		
	Condition E-1/150: T-150	psi	40,000 /		
	LW / CW	(Mpa)	(275.8) /		
Flexural Modulus (ASTM D790)	Condition A	kpsi	3,000 / 2,700		
	LW / CW	(Gpa)	(20.7) / (18.6)		
Tensile Strength (ASTM D638)	Condition A	psi		43,000 / 37,000	
	LW / CW	(Mpa)		(296.5) / (255.1)	
Izod Impact Strength (ASTM D256)	Condition A	ft-lb/in			
	LW / CW	(J/cm)			
	Condition E-48/50	ft-lb/in			12.00 / 9.00
	LW / CW	(J/cm)			(6.41) / (4.80)
Compressive Strength (ASTM D695)	Condition A	psi			72,500
	Flatwise	(Mpa)			(499.9)
Bonding Strength (ASTM D229)	Condition A	lb			1,900
		(kg)			(861.8)
Shear Strength (ASTM D732)	Condition A	psi	22,000		
	Perpendicular	(Mpa)	(151.7)		

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TYPICAL PROPERTIES (continued)

		UNITS	VALUE		
			Thickness Tested		
			0.0625"	0.125"	0.500"
THERMAL PROPERTIES					
Temperature Index ¹ (UL Bulletin 746b)	Electrical / Mechanical	°C	170 / 180		
Coefficient of Thermal Expansion (IPC-TM 650-2.4.24)	X-axis / Y-axis	" / °C x10 ⁻⁶		13.0 / 15.0	
Tg by DMA		°C			180
Flammability Rating (UL Bulletin 94)	Condition A	Class	HB		
ELECTRICAL PROPERTIES					
Dissipation Factor @ 1 MHz (ASTM D150)	Condition A	-			
	Condition D-24/23	-	0.020		
Relative Permittivity @ 1 MHz (ASTM D150)	Condition A	-			
	Condition D-24/23	-	4.80		
Breakdown Voltage (ASTM D149)	Condition A	kVolts	60		
	Condition D-48/50	kVolts	55		
Electric Strength (ASTM D149)	Condition A	Volts/mil (kV/cm)	700 (275.6)		
	Condition D-48/50	Volts/mil (kV/cm)	720 (283.5)		
Arc Resistance (ASTM D495)	Condition A	sec		120	
Comparative Tracking Index (ASTM D3638)		Volts		150	

¹ 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".

It is the responsibility of the users of this information to make sure that they have the latest version of this TDB, and are urged to check with Customer Service or, preferably our web site, www.norplex-micarta.com, to determine if the information is the most current available.

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