

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	LW / CW	psi	68,100 / 61,300	
	Condition E-1/150: T-150	LW / CW	psi	40,000 /	
Flexural Modulus (ASTM D790)	Condition A	LW / CW	kpsi	3,000 / 2,700	
	Condition A	LW / CW	psi	43,000 / 37,000	
Tensile Strength (ASTM D638)	Condition A	LW / CW	psi	43,000 / 37,000	
	Condition A	LW / CW	ft-lb/in	12.00 / 9.00	
Izod Impact Strength (ASTM D256)	Condition A	LW / CW	ft-lb/in	12.00 / 9.00	
	Condition A	Flatwise	psi	72,500	
Compressive Strength (ASTM D695)	Condition A	Flatwise	psi	72,500	
Bonding Strength (ASTM D229)	Condition A		lb	1,900	
Shear Strength (ASTM D732)	Condition A	Perpendicular	psi	22,000	

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TYPICAL PROPERTIES (continued)

	UNITS	VALUE		
		Thickness Tested		
		0.062	0.125	0.5
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 Condition A (UL Bulletin 94)	Class	HB		
ELECTRICAL PROPERTIES				
Dissipation Factor @ 1 MHz (ASTM D150) Condition A	-			
	Condition D ₁ -24/23	-	0.020	
Relative Permittivity @ 1 MHz (ASTM D150) Condition A	-			
	Condition D ₁ -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	900		
	Condition D-48/50	Volts/mil	800	
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.