NORPLEX MICARTA
Global Thermoset Composite Solutions

NP680

TECHNICAL DATA BULLETIN

GRADE: NP680 **NEMA: XP** **U.L. LISTED: N**

DESCRIPTION: Hot punching grade with electrical properties between NP611 to NP631.

TYPICAL PROPERTIES

		UNITS	VALUE		
			Thickness Tested		
			0.0625″	0.125″	0.500″
PHYSICAL PROPERTIES					
Specific Gravity *(ASTM D792)*		-			1.39
Rockwell Hardness *(ASTM D785)*	0.250″ Build-up	M Scale	94		
Moisture Absorption *(ASTM D570)*	Condition A	%			
	Condition D_1-24/23	%	1.30		
Flexural Strength *(ASTM D790)*	Condition A LW / CW	psi (Mpa)	26,400 / 21,600 (182.0) / (148.9)		
Flexural Modulus *(ASTM D790)*	Condition A LW / CW	kpsi (Gpa)	1,000 / 900 (6.9) / (6.2)		
Tensile Strength *(ASTM D638)*	Condition A LW / CW	psi (Mpa)		17,000 / 13,500 (117.2) / (93.1)	
Izod Impact Strength *(ASTM D256)*	Condition A LW / CW	ft-lb/in (J/cm)			0.56 / 0.49 (0.30) / (0.26)
Compressive Strength *(ASTM D695)*	Condition A Flatwise	psi (Mpa)			38,000 (262.0)
Bonding Strength *(ASTM D229)*	Condition A	lb (kg)			1,300 (589.7)
Shear Strength *(ASTM D732)*	Condition A Perpendicular	psi (Mpa)	11,000 (75.8)		

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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	130 / 130		
Coefficient of Thermal Expansion *(IPC-TM 650-2.4.24)*	X-axis / Y-axis	"/"/°C x10^{-6}		16.0 / 20.0	
Flammability Rating *(UL Bulletin 94)*	Condition A	Class	HB		
ELECTRICAL PROPERTIES					
Dissipation Factor @ 1 MHz *(ASTM D150)*	Condition A	-			
	Condition D-24/23	-	0.040		
Relative Permittivity @ 1 MHz *(ASTM D150)*	Condition A	-			
	Condition D-24/23	-	5.00		
Breakdown Voltage *(ASTM D149)*	Condition A	kVolts	55		
	Condition D-48/50	kVolts	12		
Electric Strength *(ASTM D149)*	Condition A	Volts/mil (kV/cm)	750 (295.3)		
	Condition D-48/50	Volts/mil (kV/cm)	500 (196.9)		
Arc Resistance *(ASTM D495)*	Condition A	sec		100	
Comparative Tracking Index *(ASTM D3638)*		Volts		180	

[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.