



# NP511CR

## *Preliminary*

# TECHNICAL DATA BULLETIN

**GRADE:** NP511CR

**NEMA GRADE:** --

**U. L. LISTED:** N

**DESCRIPTION:** NP511CR consists of glass fabric with a specially formulated epoxy resin system resulting in excellent electrical characteristics and superior physical properties at cryogenic temperatures (-270°C to 160°C operating temperature range). It has very low thermal conductivity and has been designed for cryogenic environments where radiation is a concern.<sup>1</sup>

**THICKNESS TESTED:** 0.062", 0.125" & 0.500"

## TYPICAL PROPERTIES

GENERAL PHYSICAL PROPERTIES		UNITS	VALUE
Specific Gravity (0.500")		-	1.80
Rockwell Hardness (0.250" Build-up)		M Scale	112
Moisture Absorption (0.062") Condition Di-24/23		%	0.20
Flexural Strength (0.062") Condition A	LW / CW	psi	67,750/61,000
Flexural Modulus (0.062") Condition A	LW / CW	kpsi	2,950/2,650
Tensile Strength (0.125") Condition A	LW / CW	psi	42,250/36,000
Izod Impact Strength (0.500") Condition E-48/50	LW / CW	ft-lb/in notched	12.00/9.00
Compressive Strength (0.500") Condition A	Flatwise	psi	70,500
Bond Strength (0.500") Condition A		lb	1,900

<b>THERMAL &amp; ELECTRICAL PROPERTIES</b>	<b>UNITS</b>	<b>VALUE</b>
Temperature Index      Electrical / Mechanical	°C	160/160 <sup>2</sup>
T <sub>g</sub>	°C	180
Flammability Rating - U. L. 94 (0.062")	Class	HB
Dissipation Factor (0.062") Condition D <sub>1</sub> -24/23	-	0.020
Permittivity (0.062") Condition D <sub>1</sub> -24/23	-	4.80
Breakdown Voltage (0.062") Condition A	kV	60
Condition D-48/50		55
Electric Strength (0.062") Condition A	V/mil	700
Condition D-48/50		720
Arc Resistance D495 (0.125") Condition A	sec	120

<sup>1</sup> Many in the industry refer to this formulation as NIST G11CR Process Specification. However, NIST does not have a G11CR Process Specification; therefore, we are unable to claim compliance with a NIST Process Specification.

<sup>2</sup> NEMA LI-6: 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.