九 江 鑫 星 绝 缘 材 料 有 限 公 司
JIUJIANG XINXING INSULATION MATERIAL CO.,LTD
鑫星 XINXING
Leading Manufacturer of
ELECTRICAL INSULATION MATERIALS
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TECHNICAL DATA SHEET
NEMA G-11

Item:	**NEMA G-11 Glass Epoxy Laminate**			
Description:	NEMA Grade G-11 materials are 7628 fiberglass reinforced laminates,bonded with high TG epoxy resin.It has high mechanical strength under normal temperature , still has strong mechanical strength , good electrical properties under dry and wet environment, can be used in damp environment and transformer oil.It belongs to grade F heat resistance insulating material.			
Standards:	NEMA LI-1 Grade G11● IEC60893:EPGC203,EPGC306(sheet) ● GB/T 1303.2.2009			
Application:	Applicable to all kinds of motor, electrical, electronic and other fields, widely used in motor, electrical equipment as insulation structure parts, high voltage switch gear, high voltage switch (such as motor stator insulation materials at both ends, rotor end plate rotor flange piece, slot wedge, wiring plate, etc.).			
Availability:	Laminate Sheets:		English Units(in)	SI unites(mm/cm)
		Thickness	0.008″-4.0″	0.2-101.6(mm)
		Sheet Size	40″ x 48″ 48″ x 80″ 48″ x 96″	102cm x 122cm 122cm x 204cm 122cm x 244cm
	Fabricated parts:	Xinxing Insulation custom fabricates insulation materials to the exact specifications and drawings of our customers		

TYPICAL PROPERTIES OF G11/EPGC203/EPGC306 SHEET

Key Characteristic	Units	IEC Requirement	Typical Values	Test Methods
PHYSICAL				
Standard color	--	--	Light green[1]	
Density	g/cm^3	1.8-2.0	1.8-2.0[2]	IEC60893-2:2003
Water Absorption,24 hrs 3mm	mg	22 max	17	IEC60893-2:2003
MECHANICAL				
Flexural strength perpendicular to laminations (under normal condition)	MPa	340 min	550	IEC60893-2:2003
Flexural strength perpendicular to laminations (under 150±5℃)	MPa	170 min	222	IEC60893-2:2003
Flexural modulus perpendicular to laminations	MPa	--	$2.35x10^4$	IEC60893-2:2003
Charpy impact strength parallel to laminations (Notched)	kJ/m^2	45 min	70.1	IEC60893-2:2003
Tensile strength(MD)	MPa	300 min	450	IEC60893-2:2003

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3240 ,G-10,G-11,FR-4,FR-5,EPGC308,ESD G10/FR4,EPGM SERIES,UPGM SERIES

THERMAL				
Temperature Index	℃	155	155	-
Glass transition temperature(DSC method)	℃	--	193	IEC61006:2004
Flammability	Class	HB	HB	UL-94
ELECTRICAL				
Electric strength perpendicular to laminations (at 90℃±2℃ in oil), 1mm in thickness	kV/mm	14.2 min	20.8	IEC60893-2:2003
Breakdown voltage parallel to laminations(at 90℃±2℃ in oil)	kV	50 min	85.0	IEC60893-2:2003
Insulation resistance(after 24h immersion in water)	MΩ	$5x10^4$ min	$4.7x10^6$	IEC60893-2:2003
Relative Permittivity(50Hz)	--	5.5 max	5.2	IEC60893-2:2003
Comparative tracking index	--	200 min	CTI 600[3]	IEC60893-2:2003

[1]Custom colors available upon request

[2]The density of our pure epoxy fiberglass laminate sheet is about 1.9g/cm^3,Custom formula available upon request

[3]The higher the CTI value, the better the electrical insulation performance of the material and the stronger the ability to resist electrical corrosion. That means the material is less likely to catch fire when it encounters an electric spark. Because electric appliances in the operation process, the circuit control system is easy to encounter electrical sparks, if the use of high CTI material, you can effectively avoid the fire caused by electrical sparks. In the design and manufacture of electrical equipment, the CTI value is an important indicator that can be used to evaluate the safety and reliability of materials to ensure that the equipment will not present electrical faults or hazards when used.

The above values are for reference only and are taken from the average test results, and do not represent complete consistency with the actual performance of the material.