



LA MISOLET

Working Of Electric And Thermo Insulating Materials

CNC machining by customers' drawing
Blanked findings
Direct selling
Sheets and panels – Rods – Tubes made of:
Bakelized Cloth and Bakelized Paper
Epoxy Glass Nema G10 and G11,
Silicone Nema G7 and Melamine Nema G5
Polyester Glass GPO3
Thermo Insulating Materials – Mica, Micanite
TOOLING, BLANKING AND DIEMAKING

DATA SHEET

Laminate: **LFR4**

Description: Glass cloth and epoxy resin binder laminate

According to specifications	CEI 15/10	EV ⁴⁾	Unit	Average values	Test method	Test conditions
	CEI EN 60893	EP GC 202 ⁴⁾				
	DIN 7735	Hgw 2372.1 ⁴⁾				
	NEMA LI - 1	FR4 ⁴⁾				

Physical properties	Colour	translucid natural			
	Density	g/cm ³	1,96	ISO 1183	a
	Temperature Index (TI) ²⁾	° C	B (130°C)	IEC 60216	-
	Thermal conductivity	W/mk	0,3	DIN 52612	-
	Water Absorption (for 3 mm thickness) ³⁾	mg	22	IEC 60893-2	b + d
	Flammability (category)	-	V0	UL 94	-

Mechanical	Flexural strength ⊥	MPa	540	ISO 178	a
	Modulus of elasticity	MPa	24x10 ³	ISO 178	a
	Tensile Strenght	MPa	424	ISO 527	a
	Compressive Strenght ⊥	MPa	520	ISO 604	a
	Charpy impact strength //	KJ/m ²	74	ISO 179	a

Dielectric properties	Dielectric strength ⊥ to lamination	kV/mm	14,2	ISO 60243-1	e
	Breakdown voltage	KV	35	ISO 60243-1	e
	Dissipation factor at 1 MHz		0,05	IEC 60250	d
	Dielectric constant (permittivity) at 1MHz		5,5	IEC 60250	d
	Tracking resistance	V	200	IEC 60112	a
	Insulating resistance	MΩ	5x10 ⁴	ISO 60167	d

- 1) Tests done according to IEC 893-2
- 2) The temperature index is equivalent to continuous operating temperature. The properties of the material exposed to this temperature for 20 000 hours are assumed to fall maximum by 50 % of their initial values.
- 3) If required by the client we can supply material certified according to EN45545-2: 2013 according to R22 and R23 requirements for safety levels HL1, HL2 and HL3.

We inform you that the data reported on the data sheet are provided to the end user for the sole purpose of providing a range of parameters in order to assess the hypothetical suitability of the product to the actual use of the same, therefore to be considered indicative as they represent average values from laboratory tests. **The user must then test the product to determine its properties and its suitability for its intended use.**

Misolet s.r.l expressly disclaims all liability for any damage, injury and costs to persons and/or property, arising directly or indirectly from the use of the product that has not been preceded by tests with respect to the conditions of use to which the same will be intended. The data contained in this data sheet does not constitute a guarantee of any kind, express or implied, including any suitability for a particular use or purpose.

Test condition:

- a)** 48h 15-35°C 45/75 % relative humidity **b)** 1h 105°C **c)** 24h 105°C **d)** 24h 23°C in water
e) 48h 50°C in water **f)** 24h 120°C in oil **g)** 96h 45°C 95% relative humidity

(Page 1 of 2)



LA MISOLET

Working Of Electric And Thermo Insulating Materials

CNC machining by customers' drawing
Blanked findings
Direct selling
Sheets and panels – Rods – Tubes made of:
Bakelized Cloth and Bakelized Paper
Epoxy Glass Nema G10 and G11,
Silicone Nema G7 and Melamine Nema G5
Polyester Glass GPO3
Thermo Insulating Materials – Mica, Micanite
TOOLING, BLANKING AND DIEMAKING

Laminate:

LFR4

THICKNESS mm	TOLERANCE	Particular properties:
0,2	± 0,07	- Glass fabric and self-extinguishing epoxy resin
0,3	± 0,08	
0,5	± 0,12	
0,8	± 0,16	- Low water absorption
1,0	± 0,18	- Good dielectric properties
1,2	± 0,20	- High mechanical strength
1,5	± 0,24	
2,0	± 0,28	
2,5	± 0,33	
3,0	± 0,37	
4,0	± 0,45	
5,0	± 0,52	
6,0	± 0,60	
8,0	± 0,72	
10,0	± 0,82	
12,0	± 0,94	
15,0	± 1,12	
20,0	± 1,30	
25,0	± 1,50	
30,0	± 1,70	
35,0	± 1,95	
40,0	± 2,10	
45,0	± 2,30	
50,0	± 2,45	
60,0	± 3,00	
-	-	

TO BE KEPT in dry stores, in a horizontal position

We are available to effect cutting to measurement as well as machining to drawing of parts by CNC

Ref. 216.158-R2-060717; 216.8623-A1-140611; 217.798-010720;251021;
Ed. February 2022

(Page 2 of 2)