

Bakelite® PF 13

Reviewed on: 20.12.2006

Property:	Standard	typical Value	Unit
Density * (23 °C)	ISO 1183	1,85	g/cm ³
Apparent density (moulding compound)	ISO 60	0,65	g/cm ³
Injection - Moulding shrinkage	ISO 2577		%
Injection - Post shrinkage	ISO 2577		%
Compression - Moulding shrinkage	ISO 2577	0,0	%
Compression - Post shrinkage	ISO 2577	0,02	%
Tensile strength * (5mm/min)	ISO 527 - 1/2		MPa
Tensile modulus * (1mm/min) ①	ISO 527 - 1/2		MPa
Compressive strength (test specimen flat tested)	ISO 604	135	MPa
Flexural strength (2mm/min)	ISO 178	90	MPa
Flexural modulus	ISO 178	23.500	MPa
Charpy impact strength * (23 °C)	ISO 179-1 eU	3,0	kJ/m ²
Charpy notched impact strength * (23 °C)	ISO 179-1 eA	2,0	kJ/m ²
Ball indentation hardness (H961/30)	ISO 2039/P1	430	MPa
Temp. of deflection under load.. HDT C-8,0MPa	ISO 75-2	160	°C
Surface resistivity * ②		1E+11	Ohm
Volume resistivity * ②		1E+12	Ohm * cm
Dissipation factor * (100 Hz) ③		0,04	
Relative permittivity * (100 Hz) ③		5,0	
Electric strength * (1mm thickness) ④	IEC 60243-P1	30,0	kV/mm
Proof tracking index * (Test liquid A)	IEC 6011	175	PTI
Flammability UL 94 ⑤	UL 94	V-1 / 0,75mm (NC) V-0 / 3,0mm (NC)	Step/mm
Water absorption (24h / 23°C ⑥)		10	mg
Additional characteristics		P, UL, Typ	

Storage capability:

2 years

(relative humidity of 50 - 60 % and maximum storage temperature of approximate 20°C)

Product description:

Phenolic moulding compound, inorganically mica filled, heat resistant, good electrical properties, UL listed moulding compound 0.75 mm / V-1 (NC), 3,0 mm / V-0(NC), standardized moulding compound.

Application areas:

Electric motor slip ring commutators, commutators (adjustment motors, starter motors truck, vacuum cleaners, kitchen devices, electrical tools, electrical vehicles), bobbins.

This data sheet is valid until 20.12.2007. Should this material be purchased after the validity date stated, please request an up-to-date data sheet.

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Moulding conditions:

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Injection molding

Temperature of material	80 - 100 °C
Mould temperature	160 - 190 °C
Curing time (per mm of wall thickness)	10 - 20 s
Barrel temperature - Feed zone	60 - 75 °C
Barrel temperature - Nozzle zone	80 - 100 °C
Cavity moulding pressure	>15 MPa
Back pressure	0,5 - 2 MPa
Holding pressure	ca. 60% of injection pressure

Compression molding

Mould temperature	160 - 190 °C
Curing time (per mm of wall thickness)	20 - 40 s
Cavity moulding pressure	>15 MPa

Technical Customer service:

Hexion
Gennaer Str. 2 - 4
D- 58642 Iserlohn - Letmathe
e-mail: ATE-Formmassen@hexion.com
Internet: www.hexion.com

Postfach 7154
D- 58609 Iserlohn - Letmathe
Tel.: +49 (0) 2374/925-214
Fax : +49 (0) 2374/925-336

Additional characteristics (see Datasheet):

.5 - Improved electrical properties	HT - Resistant to high temperatures
.7 - Allowed for contact with food	LB - High arc resistance
.9 - Ammonia free	M - Dishwasher proof
A - High surface quality	P - Prod. of test spec. only comp. moulding
Cu - Copper adhesive	T - Low coefficient of friction
D - Low shrinkage / good dimensional stability	Typ - Standardized moulding compounds
E - Elastified	UL - UL listed moulding compound
EL - For electrostatic coating	UV - Non fade
ES - Acetic acid free	V - yellowing resistance
G - galvanize	Z - Special presentation cyl. pellets
HS - High mechanical strength	L - conductiv

Explanations

- ①Elongation ϵ_t 0,05% , ϵ_b 0,25%
- ②Following IEC 60093
- ③Following IEC 60250
- ④Short term, electrode layout P25mm/P25mm in transformer oil equivalent to IEC 60296.
- ⑤UL 94 colour designation:
ALL = all colours, BG = beige, BK = black, BN = brown, BL = blue, GN = green,
GY = grey, NC = natural, OR = orange, RD = red, WT = white, YL = yellow
- ⑥Following ISO 62

Properties marked with * are elements of the database CAMPUS
(Computer Aided Material Preselection by Uniform Standards) and are based on the
obliging introduced guide lines of the norm comitee of plastic.
(CAMPUS: is a registered trademark of the CWFG)

Preparation of test specimens of thermosetting moulding compounds:

Compression to ISO 295 , Injection to ISO 10724

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