TECHNICAL DATA SHEET

Bakelite® EP 8412

Bakelite Synthetics
EP-(GF+X)

Processing	Injection molding, Transfer molding

Product Text

Product Information

Product description:

Epoxy moulding compound, inorganically filled, glass fibre reinforced, heat resistant, dimensionally stable, good electric and mechanical properties, very good chemical resistance, low viscosity, UL listed (RTI 155°C).

Application areas:

Encapsulation of electric parts, e. g. electromagnet coil.

Property Name	Value	Unit	Standard No.
Apparent density (moulding compound)	0.85	g/cm³	ISO 60
Moulding shrinkage (injection moulding, longitudinal)	0.3	%	ISO 2577
Post shrinkage (injection moulding, 168h/110°C)	0.02	%	ISO 2577
Moulding shrinkage (compression moulding, longitudinal)	0.25	%	ISO 2577
Post shrinkage (compression moulding, 168h/110°C)	0.01	%	ISO 2577
Tensile strength (5mm/min)	55	MPa	ISO 527-1/2
Compr. strength (test spec. flat tested)	170	MPa	ISO 604
Flexural strength (2mm/min)	125	MPa	ISO 178
Flexural modulus	15500	MPa	ISO 178

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Ball indentation hardness (H 961/30)	400	MPa	ISO 2039 /P1
Water absorption (24h/23°C)	6	mg	similar to ISO 62

Additional characteristics: high arc resistance, improved electrical properties

Preparation of Test Specimens of Thermosetting Moulding Compound

- Compression to ISO 295
- Injection to ISO 10724

Storage capability
6 months (relative humidity of 50-60% and maximum storage temperature of approximately 20°C)

Processing/Physical Characteristics	Value	Unit	Standard
Molding shrinkage, parallel	0.3	%	ISO 294-4, 2577

Mechanical Properties	Value	Unit	Standard
Tensile modulus	13000	MPa	ISO 527
Poisson's ratio	0.35		ISO 527
Charpy impact strength, +23°C	8.5	kJ/m²	ISO 179/1eU
Charpy notched impact strength, +23°C	4	kJ/m²	ISO 179/1eA

Thermal Properties	Value	Unit	Standard
Temp. of deflection under load, 8.00 MPa	120	°C	ISO 75-1/-2

Electrical Properties	Value	Unit	Standard
Relative permittivity, 100Hz	5.5		IEC 62631-2-1
Dissipation factor, 100Hz	0.02	E-4	IEC 62631-2-1
Volume resistivity	1E11	Ohm*m	IEC 62631-3-1
Surface resistivity	1E12	Ohm	IEC 62631-3-2
Electric strength	30	kV/mm	IEC 60243-1
Comparative tracking index	250		IEC 60112

Other Properties	Value	Unit	Standard
Density	1890	kg/m³	ISO 1183

Test Specimen Production	Value	Unit	Standard
Injection molding, injection temperature	125	°C	ISO 10724

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Test Specimen Production	Value	Unit	Standard
Injection molding, injection velocity	170	mm/s	ISO 10724
Injection molding, hold pressure	100	MPa	ISO 10724
Injection molding, cure time	25	min	ISO 10724
Compression molding, mold temperature	160	°C	ISO 295
Compression molding, cure time	1	min	ISO 295

Processing Information

Injection molding

PROCESSING

Temperature of material:	90 - 100	°C
Mould temperature:	170 - 190	°C
Curing time:	15-25	sec

Further Information:

Barrel temperature

- Feed zone:	60-75	°C
- Nozzle zone:	70-100	°C
Cavity moulding pressure:	>10	MPa
Back pressure:	0.5-2	MPa
Holding-pressure:	60% of injection pressure	

Compression molding

PROCESSING

Mould temperature:	160-190	°C
Curing time:	30-60	sec
Cavity moulding pressure:	>10	MPa