TECHNICAL DATA SHEET

Bakelite® EP 8414

Bakelite Synthetics
EP-(GF+X)

Processing	Injection molding, Transfer molding

Product Text

Product Information

Product description:

Epoxy moulding compound, inorganically filled, glass fibre reinforced, highly heat resistant, good electrical properties, even at higher temperatures, very slight post shrinkage, increased media resistance, UL listed moulding compound 1.5 mm / HB (BK).

Application areas:

Electrical parts, thermally, chemically and mechanically stressed parts, e.g. terminal boards, bobbins, car electronic, reflectors, spark plug connectors.

Property Name	Value	Unit	Standard No.
Apparent density (moulding compound)	0.8	g/cm³	ISO 60
Moulding shrinkage (injection moulding, longitudinal)	0.35	%	ISO 2577
Post shrinkage (injection moulding, 168h/110°C)	0.05	%	ISO 2577
Tensile strength (5mm/min)	70	MPa	ISO 527-1/2
Compr. strength (test spec. flat tested)	150	MPa	ISO 604
Flexural strength (2mm/min)	130	MPa	ISO 178
Flexural modulus	15500	MPa	ISO 178

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Ball indentation hardness (H 961/30)	350	MPa	ISO 2039/P 1
Water absorption (24h/23°C)	13	mg	similar to ISO 62

Additional characteristics: high arc resistance, improved electrical properties, low shrinkage/good dimensional stability

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	0.35	%	ISO 294-4, 2577

Mechanical Properties	Value	Unit	Standard
Tensile modulus	14000	MPa	ISO 527
Poisson's ratio	0.35		ISO 527
Charpy impact strength, +23°C	9	kJ/m²	ISO 179/1eU
Charpy notched impact strength, +23°C	3	kJ/m²	ISO 179/1eA

Thermal Properties	Value	Unit	Standard
Temp. of deflection under load, 8.00 MPa	115	°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	24	kV/mm	IEC 60243-1

Other Properties	Value	Unit	Standard
Density	1850	kg/m³	ISO 1183

Test Specimen Production	Value	Unit	Standard
Injection molding, injection temperature	125	°C	ISO 10724
Injection molding, injection velocity	170	mm/s	ISO 10724

Bakelite® EP 8414

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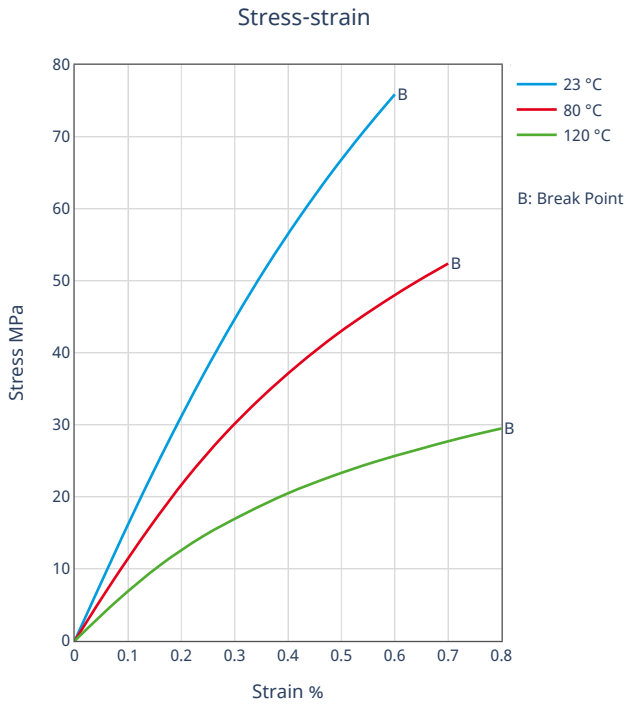
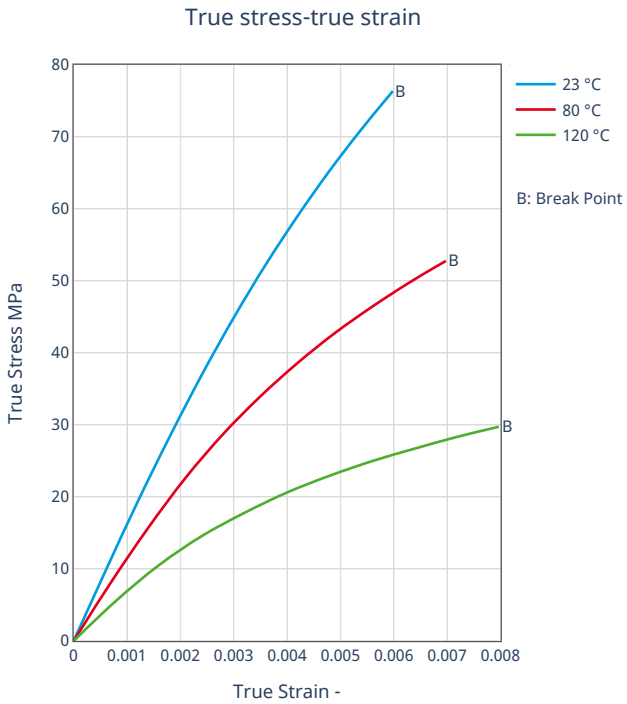
Test Specimen Production	Value	Unit	Standard
Injection molding, hold pressure	100	MPa	ISO 10724
Injection molding, cure time	25	min	ISO 10724
Compression molding, mold temperature	160	°C	ISO 295
Compression molding, cure time	1	min	ISO 295

Diagrams





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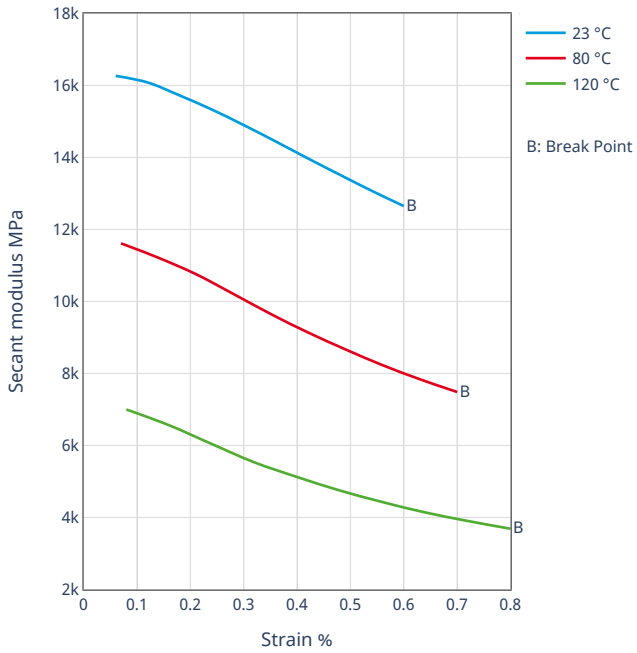
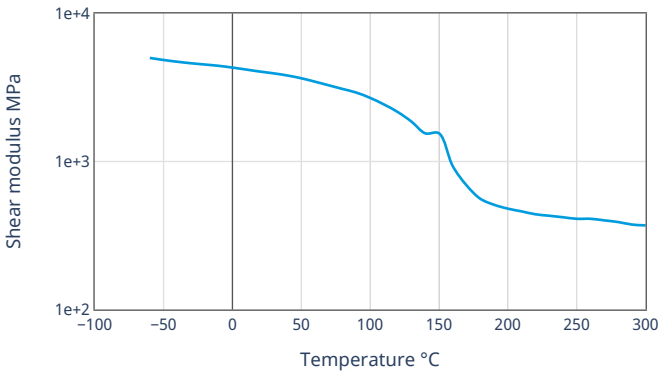
Secant modulus-strain



Dynamic shear modulus-temperature



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