

TECHNICAL DATA SHEET

Bakelite® UP 804

Bakelite Synthetics
UP-(GF+X)

Processing

Injection molding, Transfer molding

Product Text

Product Information

Product description:

Polyester moulding compound, inorganically filled, glass fibre reinforced, styrene free, high dimensional stability, very slight post shrinkage, good mechanical properties, non flammable, very good electrical properties, high temperature stability, UL listed moulding compound 1.4 mm / V-0 (BK), 1.5 mm / V-0 (BN, GY), 1.5 mm / V-1 (WT), 3.0 mm / V-0 (BK, BN, BY).

Application areas:

Explosion proof switches, safety switch housings, electric motor clamp boards, wiring devices, housing parts, oven strips, oven knobs and regulator knobs, lamp parts.

| Property Name | Value | Unit | Standard No. |
|---|-------|-------------------|--------------|
| Apparent density (moulding compound) | 0.92 | g/cm ³ | ISO 60 |
| Moulding shrinkage (compression moulding, longitudinal) | 0.15 | % | ISO 2577 |
| Post shrinkage (compression moulding, 168h/110°C) | 0.02 | % | ISO 2577 |
| Compr. strength (test spec. flat tested) | 165 | MPa | ISO 604 |
| Flexural strength (2mm/min) | 105 | MPa | ISO 178 |
| Flexural modulus | 14500 | MPa | ISO 178 |
| Ball indentation hardness (H 961/30) | 425 | MPa | ISO 2039 /P1 |

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| | | | |
|-----------------------------|----|----|-------------------|
| Water absorption (24h/23°C) | 13 | mg | similar to ISO 62 |
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Additional characteristics: high surface quality, high arc resistance

Preparation of Test Specimens of Thermosetting Moulding Compound

- Compression to ISO 295
- Injection to ISO 10724

Storage capability

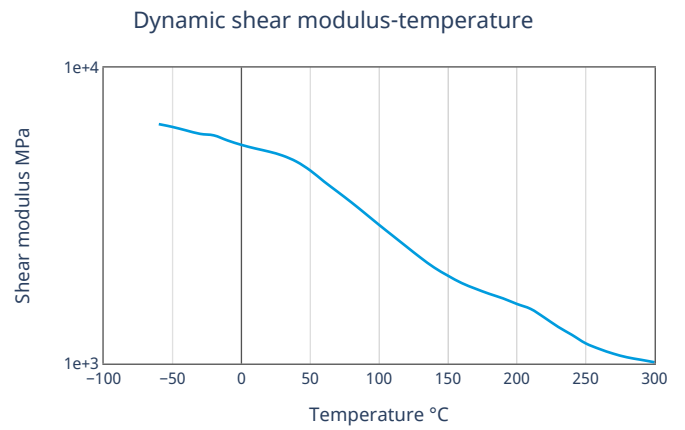
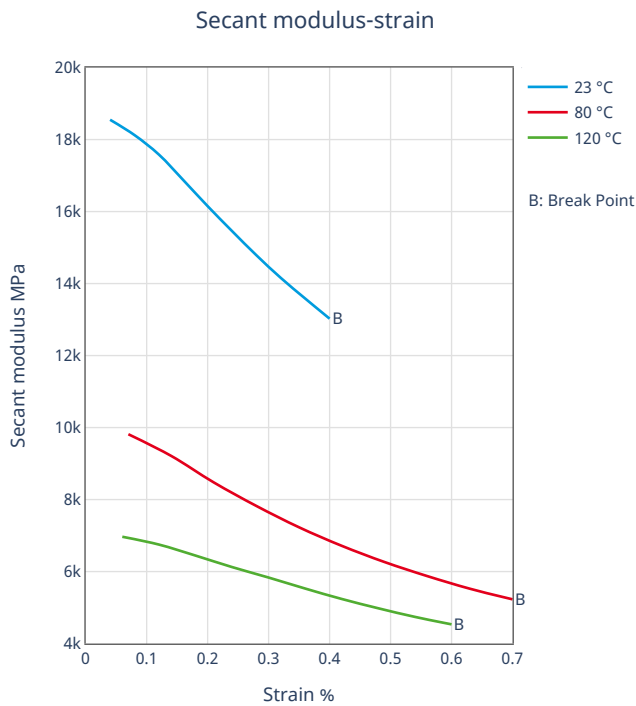
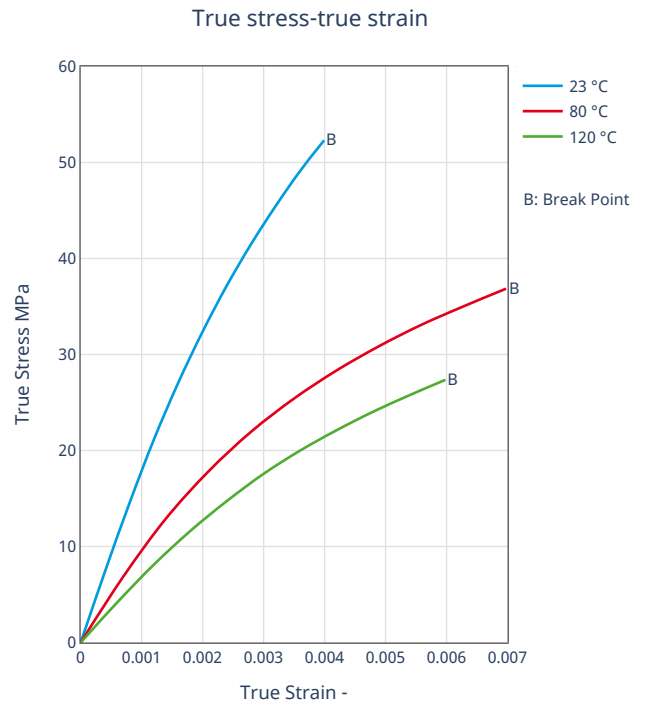
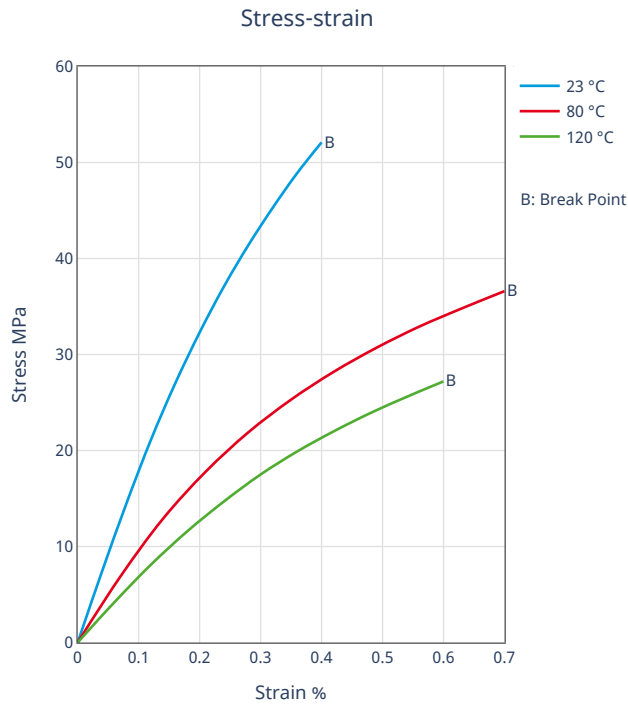
12 month (shorter shelf life for darker colours), (relative humidity of 50-60% and maximum storage temperature of approximately 20°C)

| Mechanical Properties | Value | Unit | Standard |
|--|-------|-------------------|---------------|
| Charpy impact strength, +23°C | 7 | kJ/m ² | ISO 179/1eU |
| Charpy notched impact strength, +23°C | 4 | kJ/m ² | ISO 179/1eA |
| Thermal Properties | Value | Unit | Standard |
| Temp. of deflection under load, 8.00 MPa | 205 | °C | ISO 75-1/-2 |
| Electrical Properties | Value | Unit | Standard |
| Relative permittivity, 100Hz | 6 | | 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 | 26.5 | kV/mm | IEC 60243-1 |
| Comparative tracking index | 600 | | IEC 60112 |
| Other Properties | Value | Unit | Standard |
| Density | 2100 | kg/m ³ | ISO 1183 |
| Test Specimen Production | Value | Unit | Standard |
| Injection molding, injection temperature | 105 | °C | ISO 10724 |
| 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 |

Diagrams

Bakelite® UP 804

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Injection molding

VERARBEITUNG

| | | |
|--------------------------|-----------|-----|
| Temperature of material: | 70 - 100 | °C |
| Mould temperature: | 160 - 180 | °C |
| Curing time: | 10-20 | sec |

Further Information:

Barrel temperature

| | | |
|---------------------------|---------------------------|-----|
| - Feed zone: | 60-70 | °C |
| - Nozzle zone: | 70-100 | °C |
| Cavity moulding pressure: | >10 | MPa |
| Back pressure: | 0.5-1 | MPa |
| Holding pressure: | 60% of injection pressure | |

Compression molding

PROCESSING

| | | |
|---------------------------|---------|-----|
| Mould temperature: | 160-180 | °C |
| Curing time: | 20-40 | sec |
| Cavity moulding pressure: | >10 | MPa |