

Durethan® BKV45FN04 000000

PA6-GF45 FR(40)

Envalior

Injection Molding, 45% Glass Reinforced, Flame Retardant (halogen free), Heat Stabilized, Improved flow

ISO 1043 PA6-GF45 FR(40)

| Rheological properties | dry / cond | Unit | Test Standard |
|-----------------------------|------------|------|-----------------|
| ISO Data | | | |
| Molding shrinkage, parallel | 0.2 / * | % | ISO 294-4, 2577 |
| Molding shrinkage, normal | 0.6 / * | % | ISO 294-4, 2577 |

| Mechanical Properties | dry / cond | Unit | Test Standard |
|---|---------------|-------------------|---------------|
| ISO Data | | | |
| Tensile Modulus | 15800 / 10300 | MPa | ISO 527 |
| Stress at Break | 160 / 115 | MPa | ISO 527 |
| Strain at Break | 2.2 / 4.4 | % | ISO 527 |
| Impact Strength (Charpy), +23°C | 55 / 60 | kJ/m ² | ISO 179/1eU |
| Impact Strength (Charpy), -30°C | 50 / 50 | kJ/m ² | ISO 179/1eU |
| Notched Impact Strength (Charpy), +23°C | - / 13 | kJ/m ² | ISO 179/1eA |
| Notched Impact Strength (Charpy), -30°C | - / 10 | kJ/m ² | ISO 179/1eA |
| Puncture - maximum force, +23°C | 910 / 990 | N | ISO 6603-2 |
| Puncture energy, +23°C | 3.9 / 5 | J | ISO 6603-2 |
| Flexural Modulus (23°C) | 15000 / 11300 | MPa | ISO 178 |
| Notched Impact Strength (Izod) | 10 / 13 | kJ/m ² | ISO 180/1A |
| Temperature | -30 | °C | - |
| Impact Strength (Izod), 23°C | 50 / 55 | kJ/m ² | ISO 180/1U |

| Thermal Properties | dry / cond | Unit | Test Standard |
|---|------------|-------|-----------------|
| ISO Data | | | |
| Melting Temperature (10°C/min) | 220 / * | °C | ISO 11357-1/-3 |
| Temp. of deflection under load (1.80 MPa) | 210 / * | °C | ISO 75-1/-2 |
| Temp. of deflection under load (0.45 MPa) | 220 / * | °C | ISO 75-1/-2 |
| Coeff. of Linear Therm. Expansion, parallel | 20 / * | E-6/K | ISO 11359-1/-2 |
| Coeff. of Linear Therm. Expansion, normal | 70 / * | E-6/K | ISO 11359-1/-2 |
| Burning Behav. at 1.5 mm Nom. Thickn. | V-0 / * | class | UL 94 |
| Burning Behav. at thickness h | V-0 / * | class | UL 94 |
| Burning Behav. 5V at Thickness h | 5VA / * | class | IEC 60695-11-20 |
| Thickness tested | 1.0 / * | mm | - |
| Oxygen index | 34 / * | % | ISO 4589-1/-2 |

| Electrical Properties | dry / cond | Unit | Test Standard |
|------------------------------|----------------|-------|---------------|
| ISO Data | | | |
| Relative permittivity, 100Hz | 4.3 / 8.2 | - | IEC 62631-2-1 |
| Relative permittivity, 1MHz | 3.9 / 4.2 | - | IEC 62631-2-1 |
| Dissipation Factor, 100Hz | 145 / 970 | E-4 | IEC 62631-2-1 |
| Dissipation Factor, 1MHz | 150 / 630 | E-4 | IEC 62631-2-1 |
| Volume Resistivity | >1E13 / 4.8E10 | Ohm*m | IEC 62631-3-1 |
| Surface Resistivity | * / 1.8E14 | Ohm | IEC 62631-3-2 |
| Electric Strength | 40 / 36 | kV/mm | IEC 60243-1 |
| Comparative tracking index | 600 / - | - | IEC 60112 |

| Other Properties | dry / cond | Unit | Test Standard |
|---------------------|------------|-------------------|----------------|
| ISO Data | | | |
| Water Absorption | 3.5 / * | % | Sim. to ISO 62 |
| Humidity absorption | 1.1 / * | % | Sim. to ISO 62 |
| Density | 1570 / - | kg/m ³ | ISO 1183 |

| Test specimen production | Value | Unit | Test Standard |
|-------------------------------------|-------|------|---------------|
| ISO Data | | | |
| Injection Molding, melt temperature | 260 | °C | ISO 294 |
| Injection Molding, mold temperature | 80 | °C | ISO 294 |

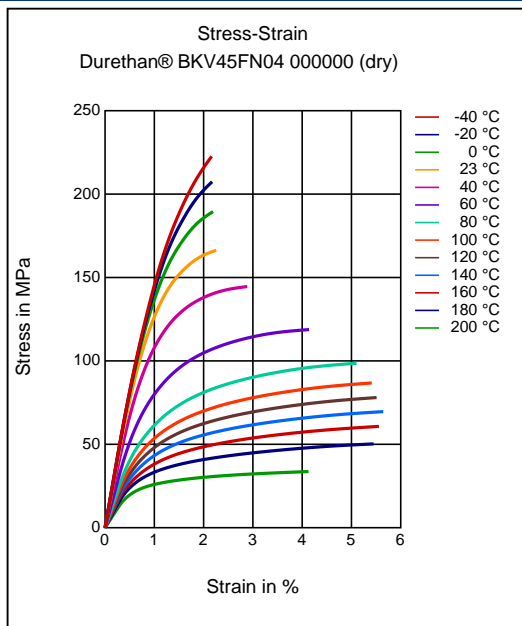
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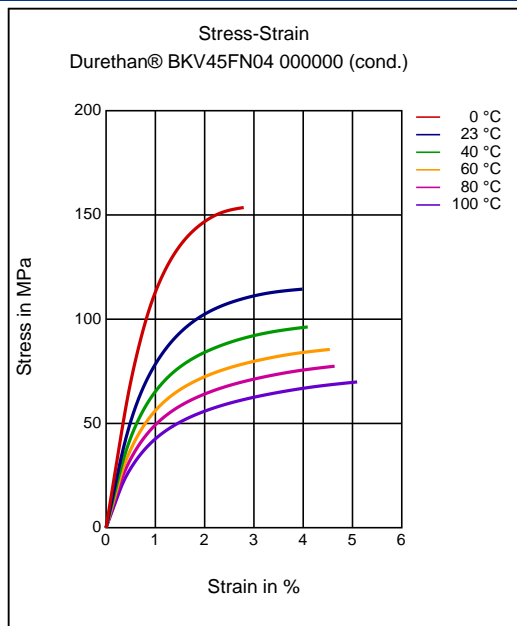
| Processing Recommendation Injection Molding | Value | Unit | Test Standard |
|---|-----------|------|---------------|
| Pre-drying - Temperature | 80 | °C | - |
| Pre-drying - Time | 4 - 6 | h | - |
| Processing humidity | ≤0.07 | % | - |
| Melt temperature | 250 - 280 | °C | - |
| Mold temperature | 70 - 90 | °C | - |

Diagrams

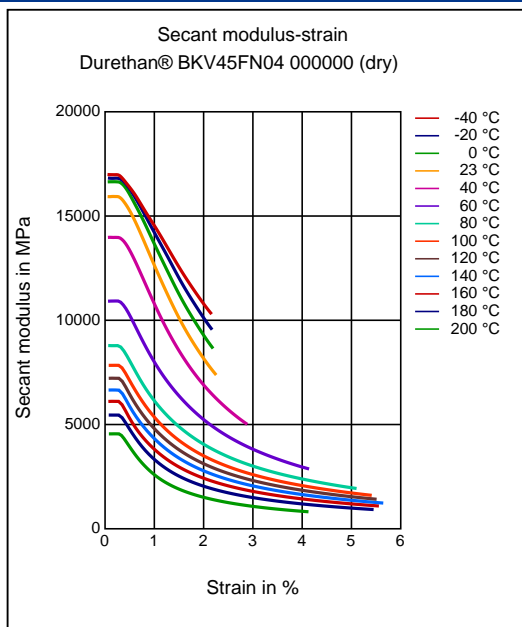
Stress-strain



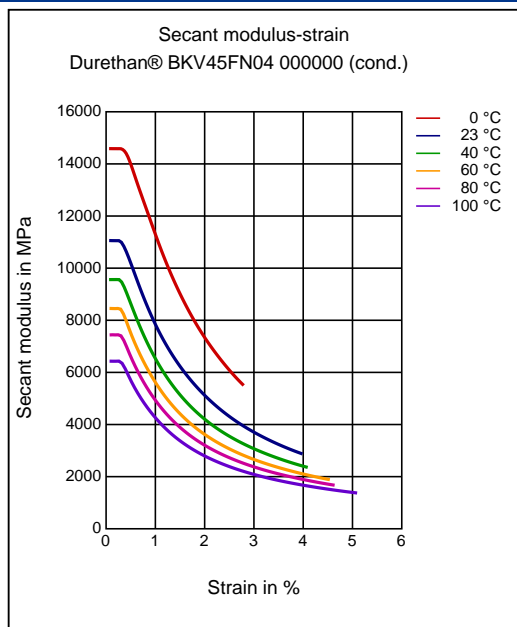
Stress-strain



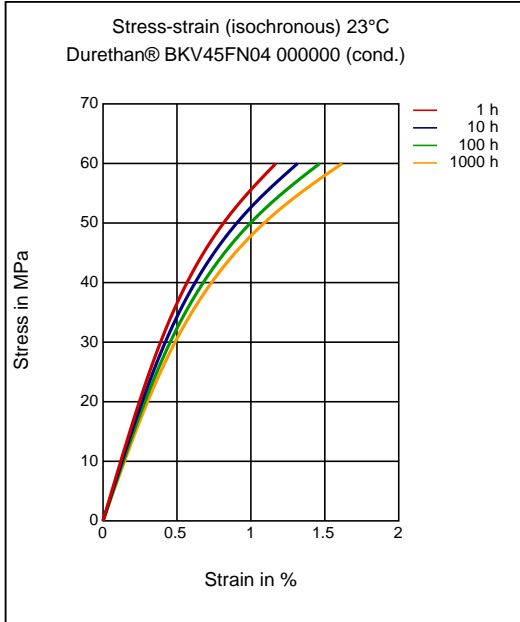
Secant modulus-strain



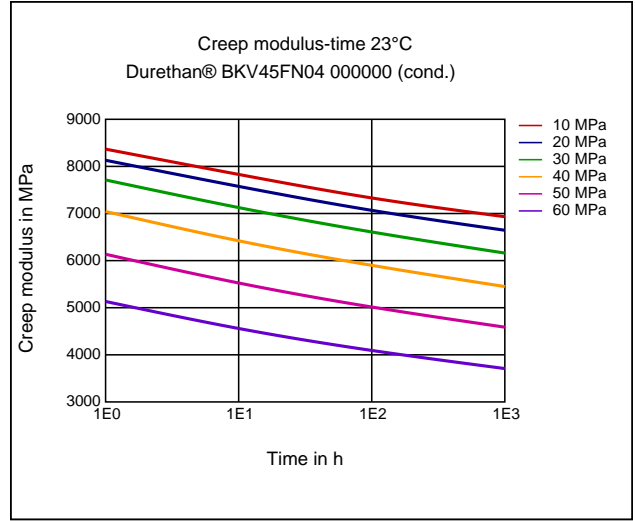
Secant modulus-strain



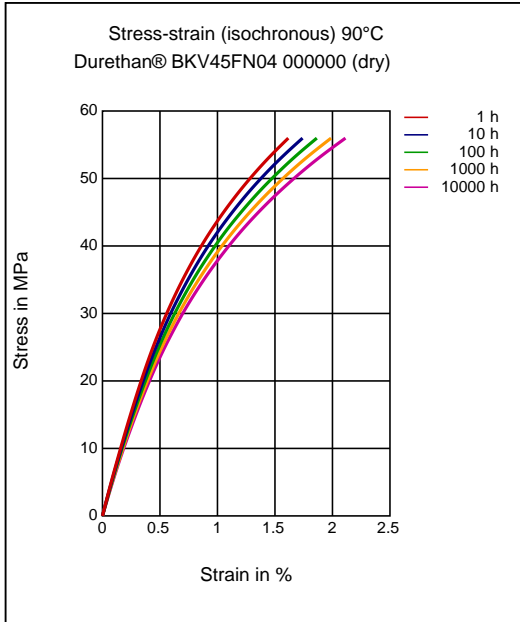
Stress-strain (isochronous) 23°C



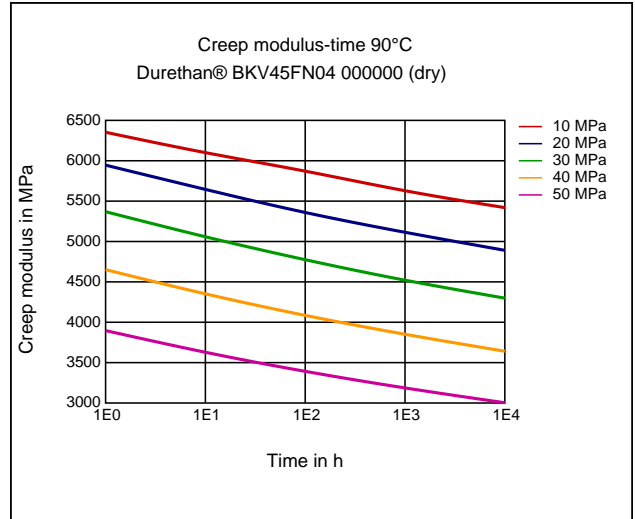
Creep modulus-time 23°C



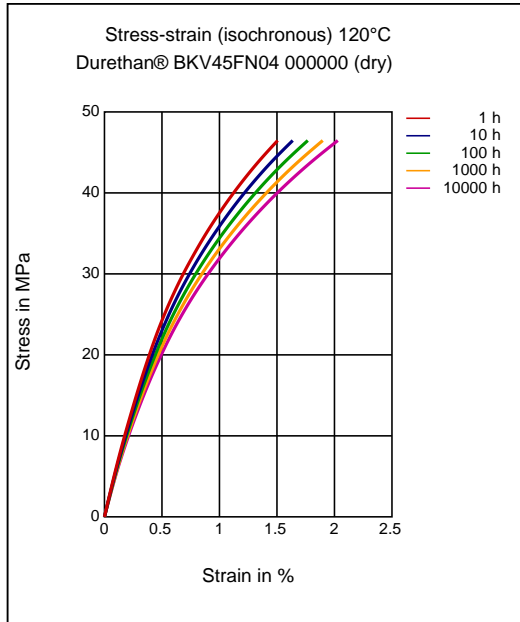
Stress-strain (isochronous) 90°C



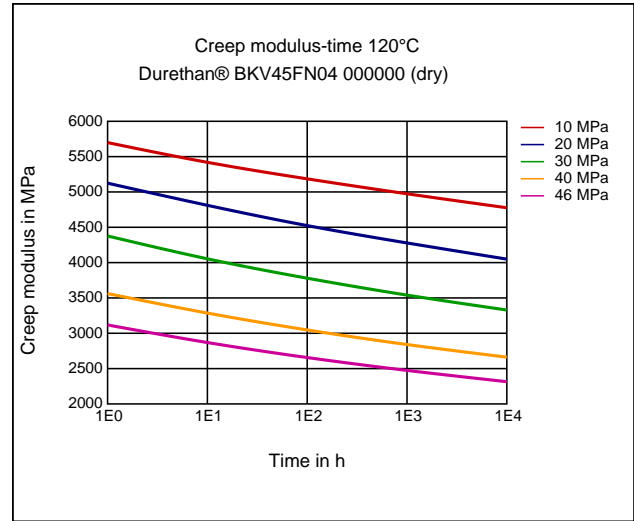
Creep modulus-time 90°C



Stress-strain (isochronous) 120 °C



Creep modulus-time 120 °C



Characteristics

Processing

Injection Molding

Delivery form

Pellets

Special Characteristics

Flame retardant, Halogen-free, Heat aging stabilized

Injection Molding

PREPROCESSING

Residual moisture content: 0.03 - 0.07%

Drying temperature dry air dryer: 80 °C

Drying time dry air dryer 2 - 6 h

PROCESSING

Melt temperature (Tmin - Tmax): 250 - 280 °C

Mold temperature: 70 - 90 °C