

**Durethan® ECOBKV20FN20 000000**  
**PA6-GX20 FR(40+30)**

Envalior

Injection Molding, 20% Glass Beads Reinforced, Flame Retardant (halogen free), Heat Stabilized, Recycled Content

ISO 1043 PA6-GX20 FR(40+30)

| Rheological properties      | dry / cond | Unit | Test Standard   |
|-----------------------------|------------|------|-----------------|
| <b>ISO Data</b>             |            |      |                 |
| Molding shrinkage, parallel | 0.6 / *    | %    | ISO 294-4, 2577 |
| Molding shrinkage, normal   | 0.7 / *    | %    | ISO 294-4, 2577 |

| Mechanical Properties                   | dry / cond  | Unit              | Test Standard |
|-----------------------------------------|-------------|-------------------|---------------|
| <b>ISO Data</b>                         |             |                   |               |
| Tensile Modulus                         | 6100 / 3100 | MPa               | ISO 527       |
| Stress at Break                         | 100 / 55    | MPa               | ISO 527       |
| Strain at Break                         | 3 / 15      | %                 | ISO 527       |
| Impact Strength (Charpy), +23°C         | 35 / 100    | kJ/m <sup>2</sup> | ISO 179/1eU   |
| Impact Strength (Charpy), -30°C         | - / 30      | kJ/m <sup>2</sup> | ISO 179/1eU   |
| Notched Impact Strength (Charpy), +23°C | - / 10      | kJ/m <sup>2</sup> | ISO 179/1eA   |
| Notched Impact Strength (Charpy), -30°C | - / 10      | kJ/m <sup>2</sup> | ISO 179/1eA   |

| Thermal Properties                          | dry / cond | Unit  | Test Standard  |
|---------------------------------------------|------------|-------|----------------|
| <b>ISO Data</b>                             |            |       |                |
| Melting Temperature (10°C/min)              | 222 / *    | °C    | ISO 11357-1/-3 |
| Temp. of deflection under load (1.80 MPa)   | 185 / *    | °C    | ISO 75-1/-2    |
| Temp. of deflection under load (0.45 MPa)   | 215 / *    | °C    | ISO 75-1/-2    |
| Coeff. of Linear Therm. Expansion, parallel | 40 / *     | E-6/K | ISO 11359-1/-2 |
| Coeff. of Linear Therm. Expansion, normal   | 90 / *     | E-6/K | ISO 11359-1/-2 |
| Burning Behav. at 1.5 mm Nom. Thickn.       | V-2 / *    | class | UL 94          |
| Thickness tested                            | 1.5 / *    | mm    | -              |
| Oxygen index                                | 26.9 / *   | %     | ISO 4589-1/-2  |

| Electrical Properties      | dry / cond | Unit  | Test Standard |
|----------------------------|------------|-------|---------------|
| <b>ISO Data</b>            |            |       |               |
| Volume Resistivity         | >1E13 / -  | Ohm*m | IEC 62631-3-1 |
| Electric Strength          | 32 / -     | kV/mm | IEC 60243-1   |
| Comparative tracking index | 500 / -    | -     | IEC 60112     |

| Other Properties    | dry / cond | Unit              | Test Standard  |
|---------------------|------------|-------------------|----------------|
| <b>ISO Data</b>     |            |                   |                |
| Water Absorption    | 7 / *      | %                 | Sim. to ISO 62 |
| Humidity absorption | 2.1 / *    | %                 | Sim. to ISO 62 |
| Density             | 1310 / -   | kg/m <sup>3</sup> | ISO 1183       |

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

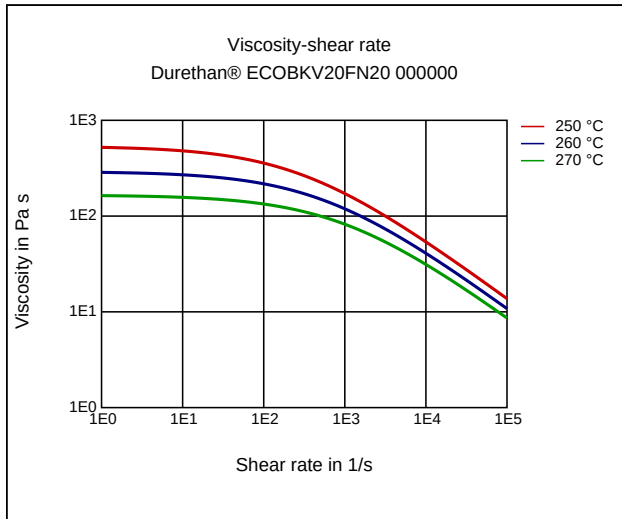
| Processing Recommendation Injection Molding | Value     | Unit | Test Standard |
|---------------------------------------------|-----------|------|---------------|
| Pre-drying - Temperature                    | 80        | °C   | -             |
| Pre-drying - Time                           | 2 - 6     | h    | -             |
| Processing humidity                         | ≤0.07     | %    | -             |
| Melt temperature                            | 250 - 270 | °C   | -             |
| Mold temperature                            | 80 - 100  | °C   | -             |

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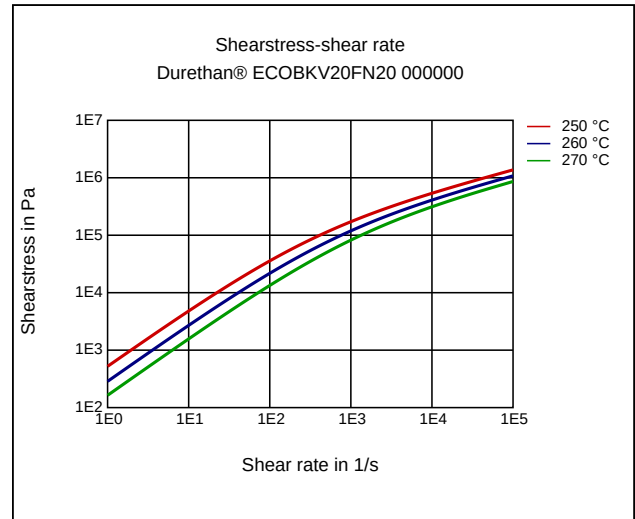
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**Diagrams**

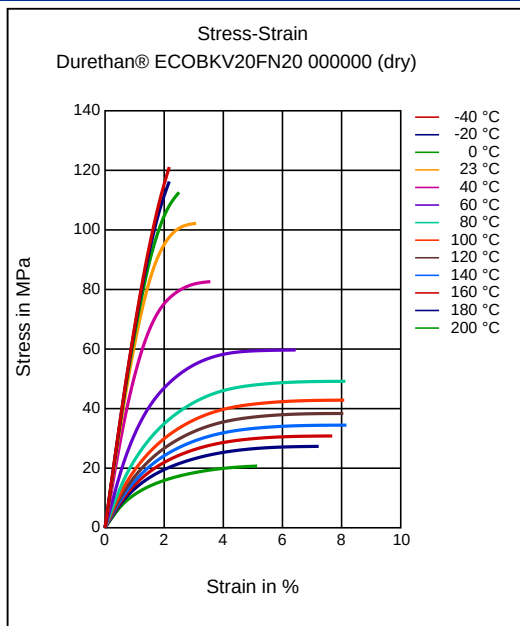
**Viscosity-shear rate**



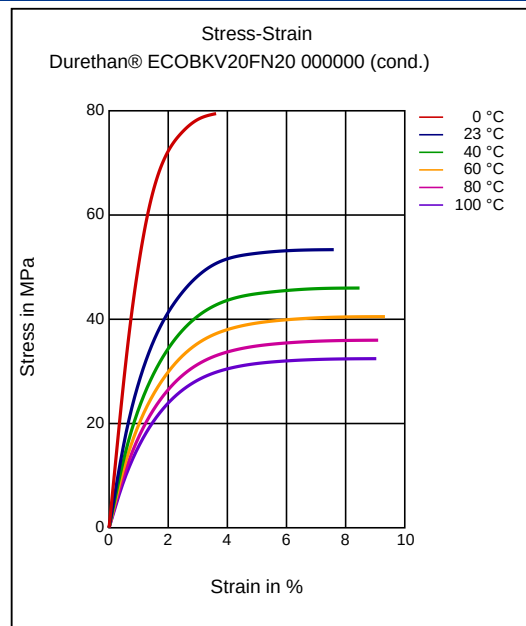
**Shearstress-shear rate**



**Stress-strain**



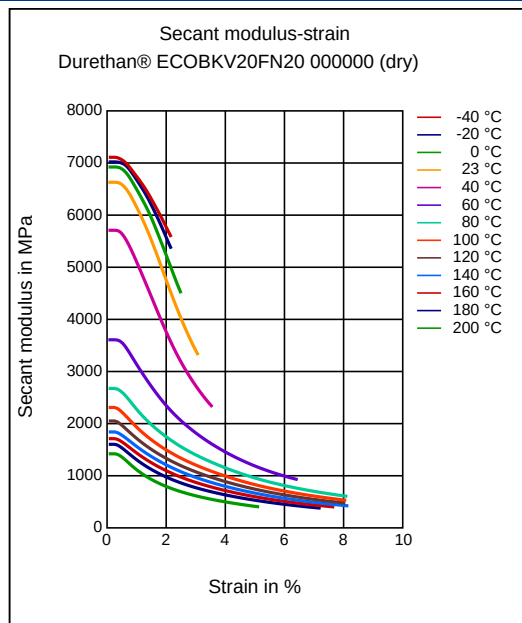
**Stress-strain**



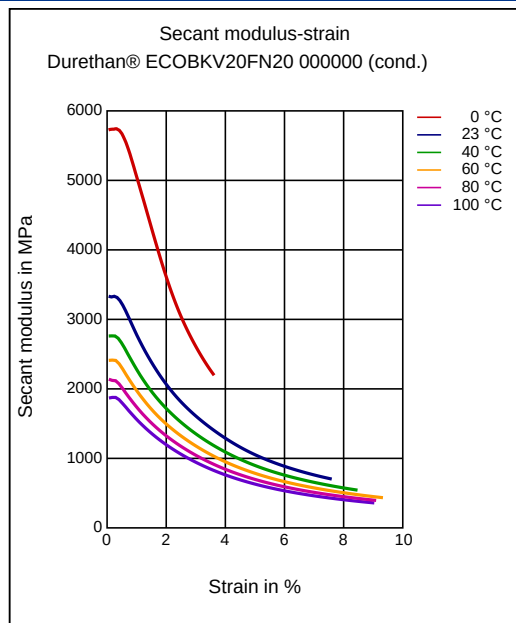
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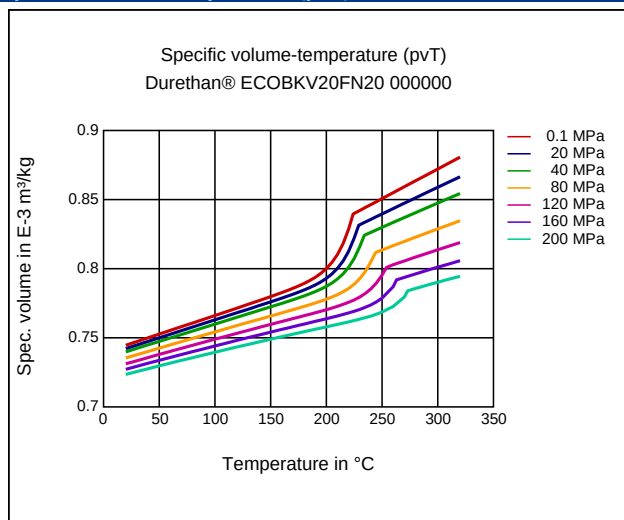
#### Secant modulus-strain



#### Secant modulus-strain



#### Specific volume-temperature (pvT)



#### Characteristics

##### Processing

Injection Molding

##### Delivery form

Pellets

##### Special Characteristics

Flame retardant, Halogen-free, Heat aging stabilized

##### Certifications

Recycled Resin Content

#### 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

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**PROCESSING**

Melt temperature (Tmin - Tmax): 250 - 270 °C

admissible residence time at Tmax <5 min

Mold temperature: 80 - 100 °C

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