

TECHNICAL DATA SHEET

Stanyl® Diablo OCD2100 BK27021

Envalior
PA46-GF40

Processing

Injection molding

Delivery Form

Pellets, Black

Additives

Lubricants, Release agent

Special Characteristics

Heat stabilized or stable to heat

Product Text

Product Information

40% Glass Reinforced, Heat Stabilized

ISO 1043 PA46-GF40

| Processing/Physical Characteristics | Value | Unit | Standard |
|-------------------------------------|---------|-------------------|-----------------|
| Molding shrinkage, parallel | 0.5 | % | ISO 294-4, 2577 |
| Molding shrinkage, normal | 1 | % | ISO 294-4, 2577 |
| Density of melt | 1319 | kg/m ³ | |
| Thermal conductivity of melt | 0.314 | W/(m K) | |
| Spec. heat capacity of melt | 2130 | J/(kg K) | |
| Eff. thermal diffusivity | 1.12E-7 | m ² /s | |

| Mechanical Properties | Value | Unit | Standard |
|---------------------------------------|-------|-------------------|-------------|
| Tensile modulus | 13000 | MPa | ISO 527 |
| Stress at break | 210 | MPa | ISO 527 |
| Strain at break | 3 | % | ISO 527 |
| Poisson's ratio | 0.35 | | ISO 527 |
| Charpy impact strength, +23°C | 90 | kJ/m ² | ISO 179/1eU |
| Charpy impact strength, -30°C | 65 | kJ/m ² | ISO 179/1eU |
| Charpy notched impact strength, +23°C | 15 | kJ/m ² | ISO 179/1eA |
| Charpy notched impact strength, -30°C | 12 | kJ/m ² | ISO 179/1eA |

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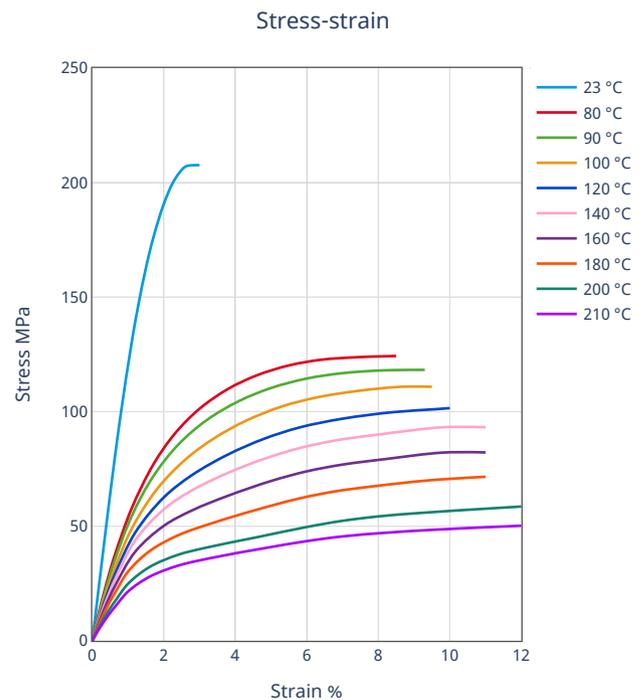
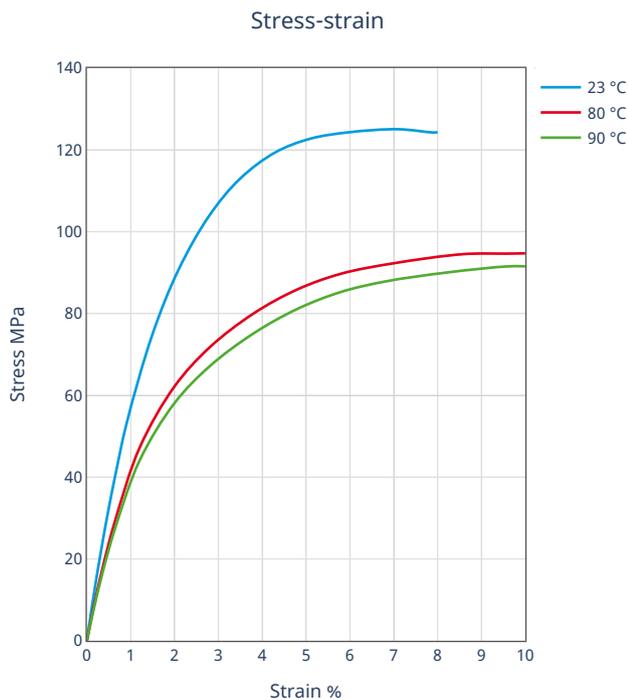
| Thermal Properties | Value | Unit | Standard |
|---|-------|-------|----------------|
| Melting temperature, 10°C/min | 282 | °C | ISO 11357-1/-3 |
| Glass transition temperature, 10°C/min | 70 | °C | ISO 11357-1/-2 |
| Temp. of deflection under load, 1.80 MPa | 256 | °C | ISO 75-1/-2 |
| Temp. of deflection under load, 0.45 MPa | 270 | °C | ISO 75-1/-2 |
| Coeff. of linear therm. expansion, parallel | 25 | E-6/K | ISO 11359-1/-2 |
| Coeff. of linear therm. expansion, normal | 50 | E-6/K | ISO 11359-1/-2 |

| Electrical Properties | Value | Unit | Standard |
|----------------------------|-------|------|-----------|
| Comparative tracking index | 300 | | IEC 60112 |

| Other Properties | Value | Unit | Standard |
|---------------------|-------|-------------------|----------------|
| Water absorption | 6.7 | % | Sim. to ISO 62 |
| Humidity absorption | 2.2 | % | Sim. to ISO 62 |
| Density | 1480 | kg/m ³ | ISO 1183 |

| Material Specific Properties | Value | Unit | Standard |
|------------------------------|-------|--------------------|---------------------|
| Viscosity number | 155 | cm ³ /g | ISO 307, 1157, 1628 |

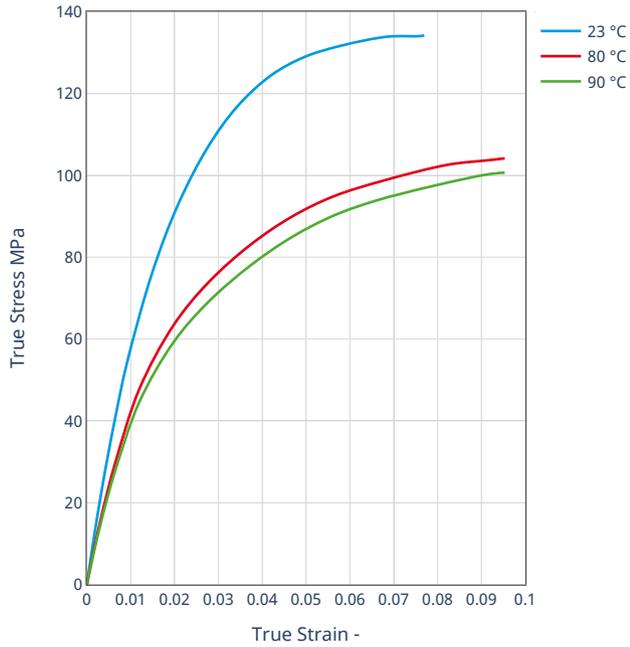
Diagrams



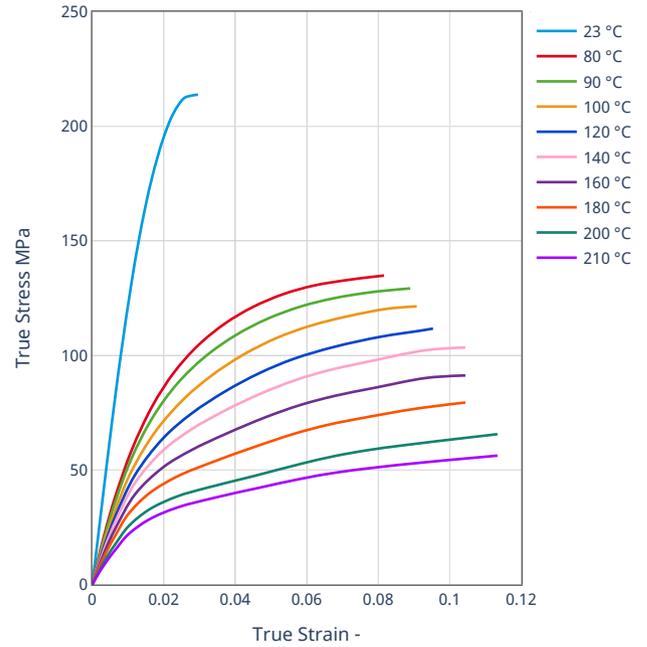
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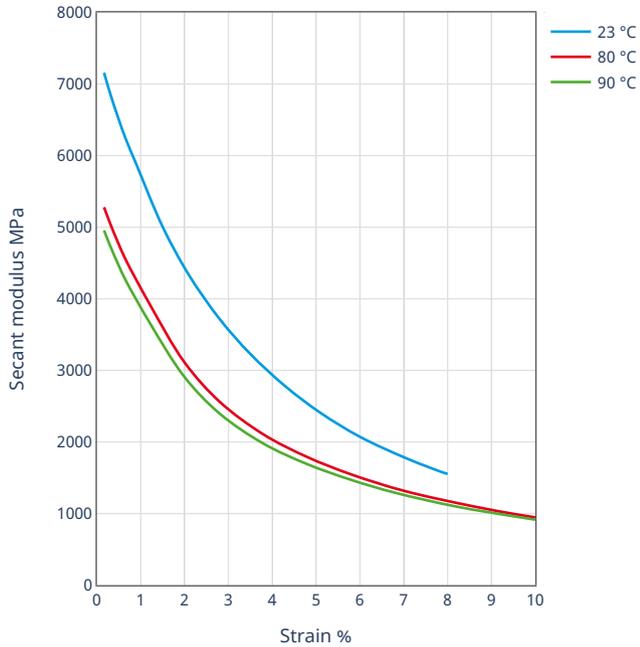
True stress-true strain



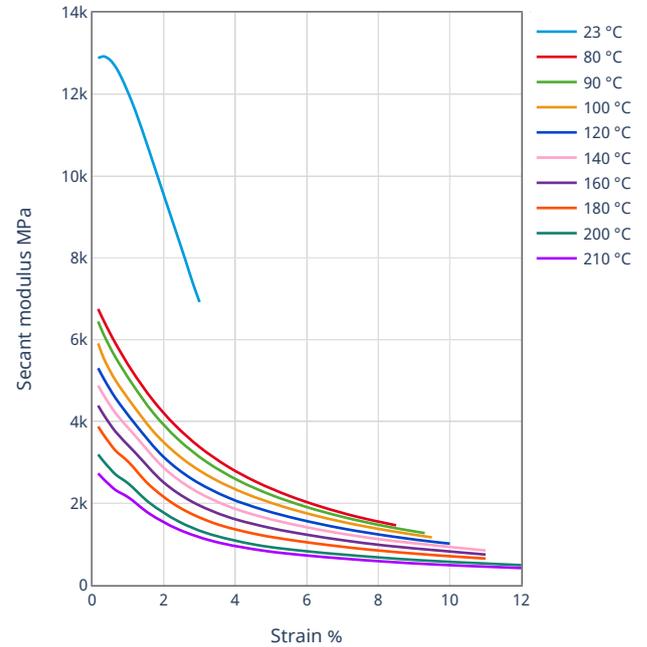
True stress-true strain



Secant modulus-strain



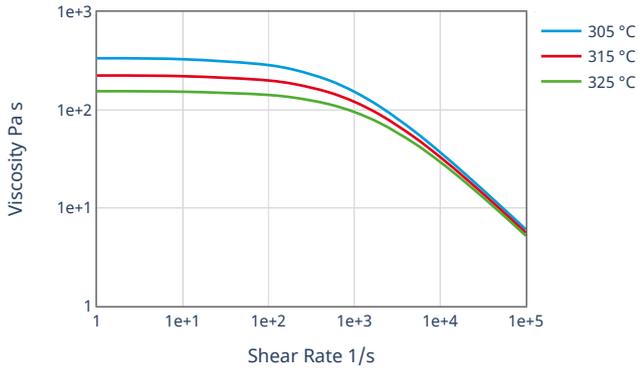
Secant modulus-strain



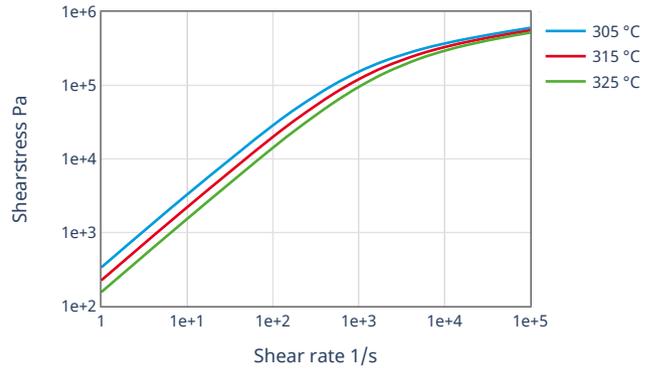
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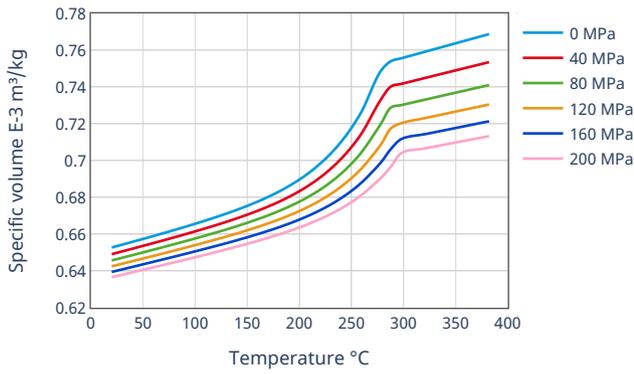
Viscosity-shear rate



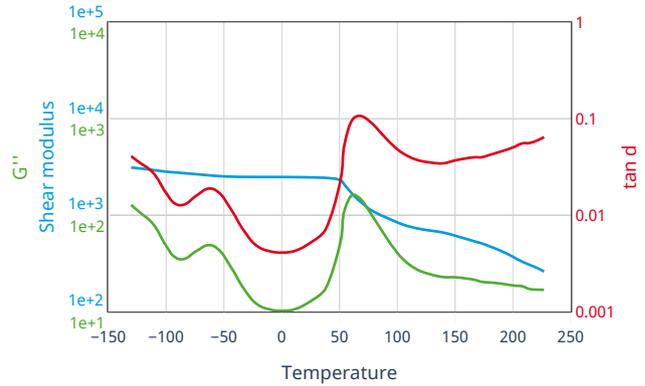
Shearstress-shear rate



Spec. volume-Temperature (pVT)



Dynamic shear modulus-temperature



Processing Information

Injection molding

Injection Molding Recommendations

Hot runner recommendations for molding high heat performance Engineering Materials

Steel recommendations for molds screws and barrels

Supporting document for Stanyl quality processing

Trouble shooting guideline for injection molding