

TECHNICAL DATA SHEET

Stanyl® TW241B3

Envalior
PA46-CF15

Processing

Injection molding

Additives

Lubricants

Special Characteristics

Heat stabilized or stable to heat

Product Text

Product Information

15% Carbon Reinforced, Heat Stabilized, Lubricated

ISO 1043 PA46-CF15

Stanyl® TW241B3 is a high heat polyamide that offers excellent creep resistance, strength, stiffness and fatigue resistance especially at high temperatures in combination with cycle-time advantages and excellent flow. TW241B3 has an excellent track-record in gear applications.

| Processing/Physical Characteristics | Value | Unit | Standard |
|---------------------------------------|-------|-------------------|-----------------|
| Molding shrinkage, parallel | 0.3 | % | ISO 294-4, 2577 |
| Molding shrinkage, normal | 1.1 | % | ISO 294-4, 2577 |
| Mechanical Properties | Value | Unit | Standard |
| Tensile modulus | 13000 | MPa | ISO 527 |
| Stress at break | 210 | MPa | ISO 527 |
| Strain at break | 2.3 | % | ISO 527 |
| Poisson's ratio | 0.35 | | ISO 527 |
| Charpy impact strength, +23°C | 45 | kJ/m ² | ISO 179/1eU |
| Charpy impact strength, -30°C | 40 | kJ/m ² | ISO 179/1eU |
| Charpy notched impact strength, +23°C | 5.5 | kJ/m ² | ISO 179/1eA |
| Charpy notched impact strength, -30°C | 4.5 | kJ/m ² | ISO 179/1eA |
| Thermal Properties | Value | Unit | Standard |
| Melting temperature, 10°C/min | 295 | °C | ISO 11357-1/-3 |

Stanyl® TW241B3

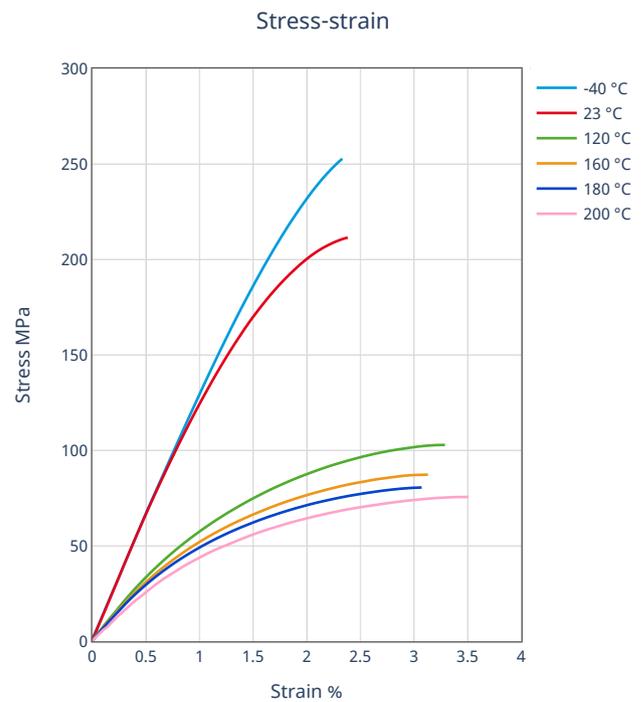
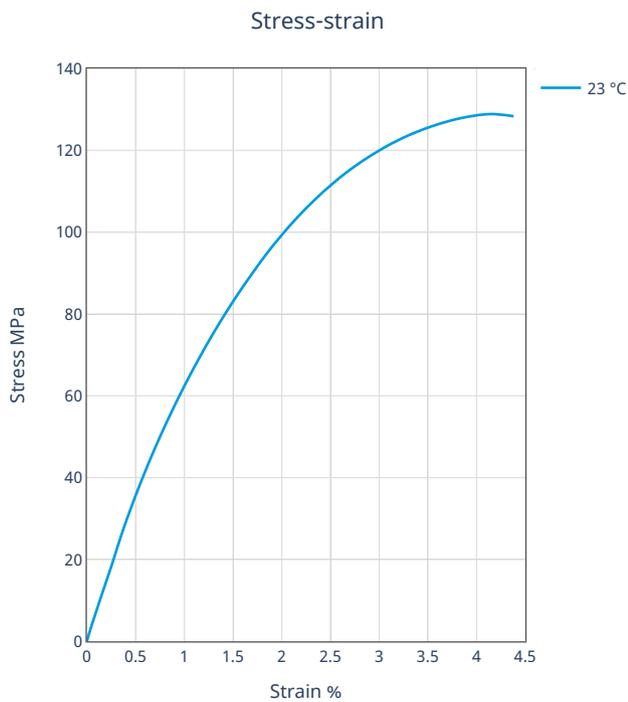
Envalior

| Thermal Properties | Value | Unit | Standard |
|---|-------|-------|----------------|
| Glass transition temperature, 10°C/min | 75 | °C | ISO 11357-1/-2 |
| Temp. of deflection under load, 1.80 MPa | 290 | °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 |
|-----------------------|-------|-------|---------------|
| Volume resistivity | 1E5 | Ohm*m | IEC 62631-3-1 |

| Other Properties | Value | Unit | Standard |
|---------------------|-------|-------------------|----------------|
| Water absorption | 11.5 | % | Sim. to ISO 62 |
| Humidity absorption | 3.2 | % | Sim. to ISO 62 |
| Density | 1230 | kg/m ³ | ISO 1183 |

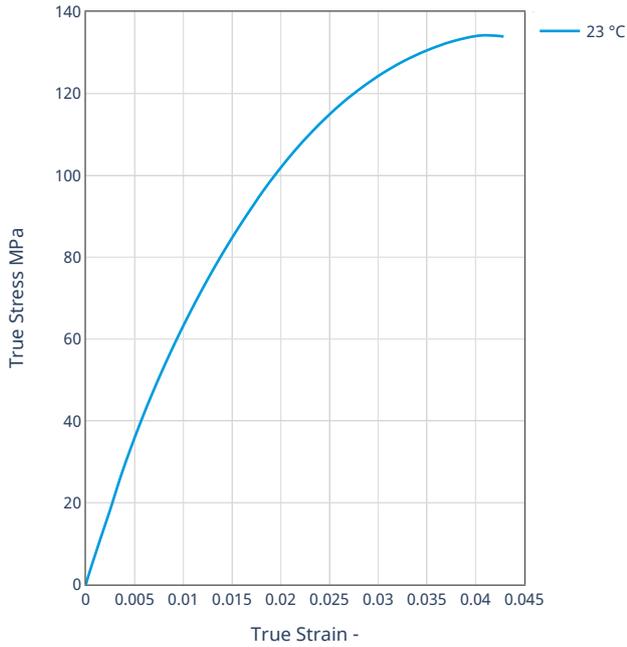
Diagrams



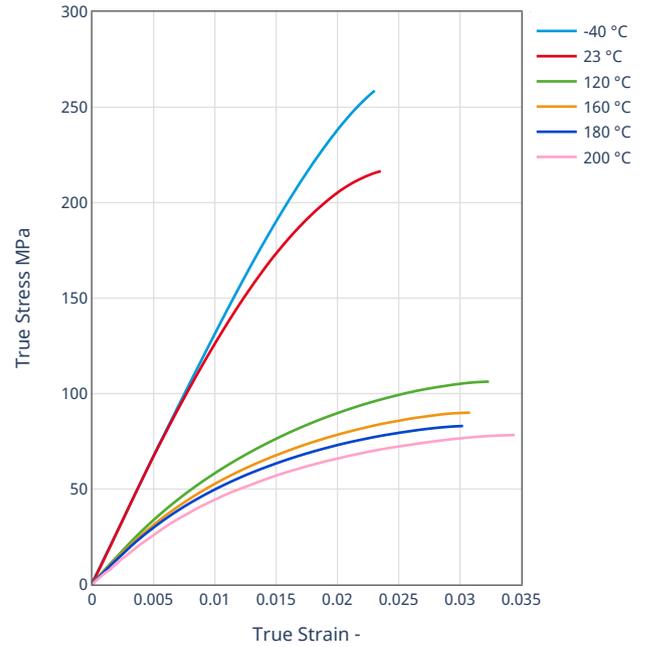
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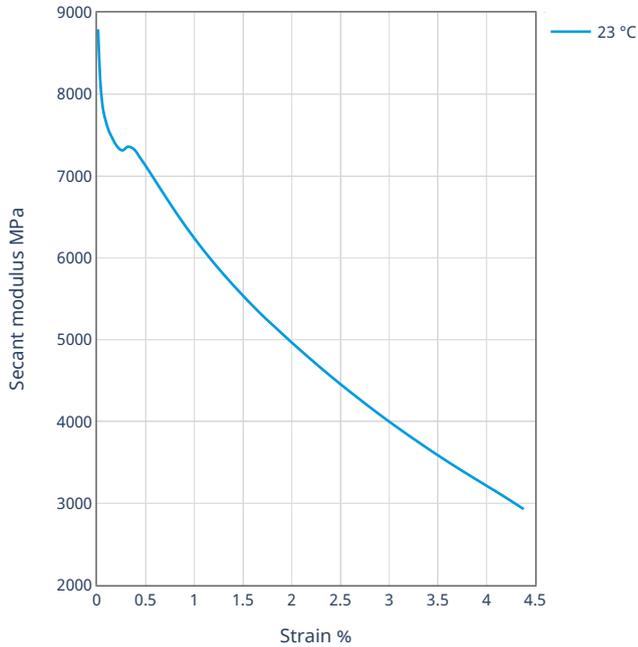
True stress-true strain



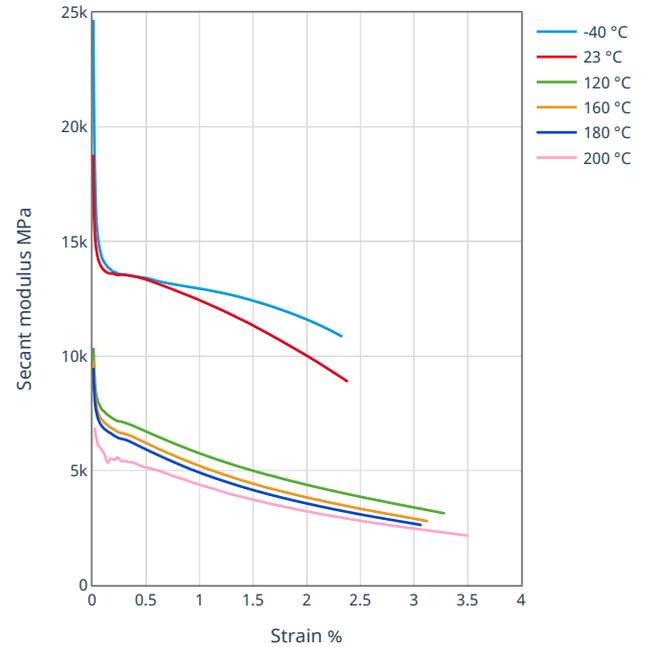
True stress-true strain



Secant modulus-strain



Secant modulus-strain



Processing Information

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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