

TECHNICAL DATA SHEET

# Stanyl® TW200F6

Envalior  
PA46-GF30

**Processing**

Injection molding

**Delivery Form**

Pellets

**Special Characteristics**

Platable, Heat stabilized or stable to heat

## Product Text

**Product Information**

30% Glass Reinforced, Heat Stabilized

ISO 1043 PA46-GF30

Stanyl® TW200F6 is a high heat polyamide that offers excellent creep resistance, strength, stiffness and fatigue resistance, not only at ambient temperatures but especially at high temperatures, while at the same time providing cycle-time advantages and excellent flow.

Processing/Physical Characteristics	Value	Unit	Standard
Density of melt	1210	kg/m <sup>3</sup>	
Thermal conductivity of melt	0.296	W/(m K)	
Spec. heat capacity of melt	2202	J/(kg K)	
Eff. thermal diffusivity	1.1E-7	m <sup>2</sup> /s	
Mechanical Properties	Value	Unit	Standard
Tensile modulus	10000	MPa	ISO 527
Stress at break	210	MPa	ISO 527
Strain at break	3.7	%	ISO 527
Poisson's ratio	0.35		ISO 527
Tensile creep modulus, 1000h	4500	MPa	ISO 899-1
Charpy impact strength, +23°C	80	kJ/m <sup>2</sup>	ISO 179/1eU
Charpy impact strength, -30°C	65	kJ/m <sup>2</sup>	ISO 179/1eU
Charpy notched impact strength, +23°C	12	kJ/m <sup>2</sup>	ISO 179/1eA
Charpy notched impact strength, -30°C	11	kJ/m <sup>2</sup>	ISO 179/1eA

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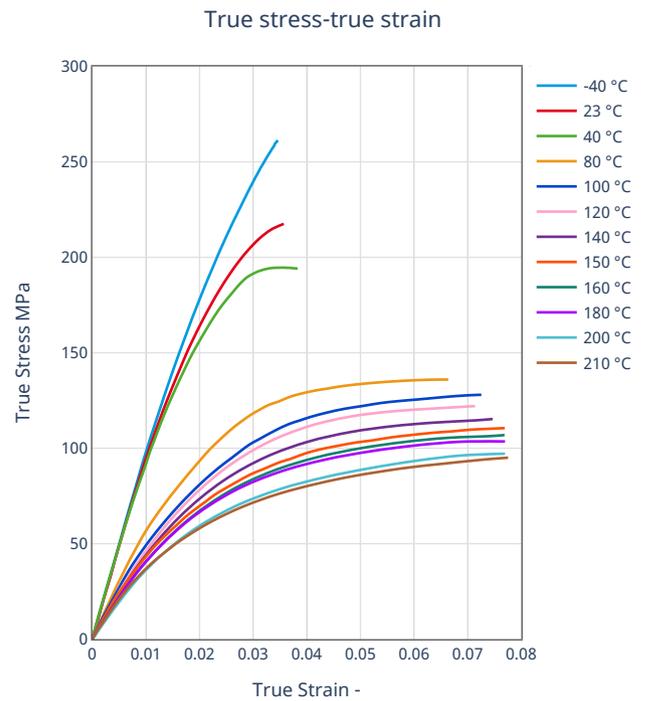
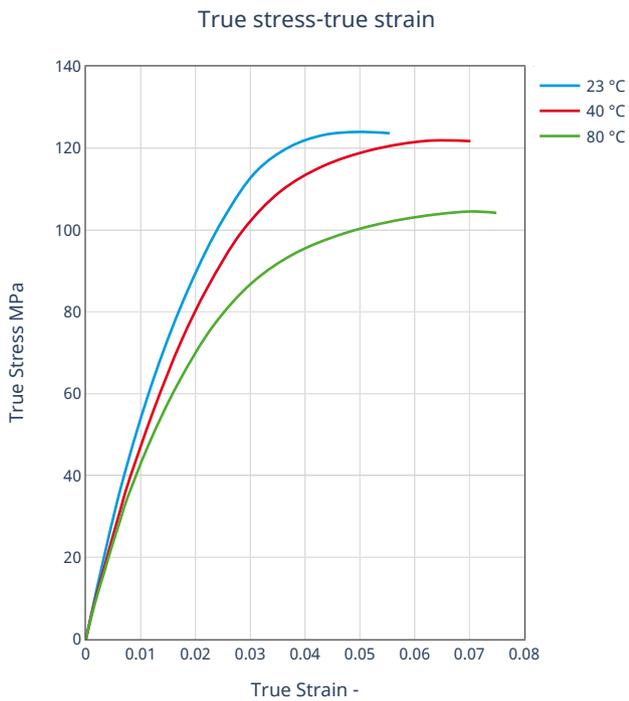
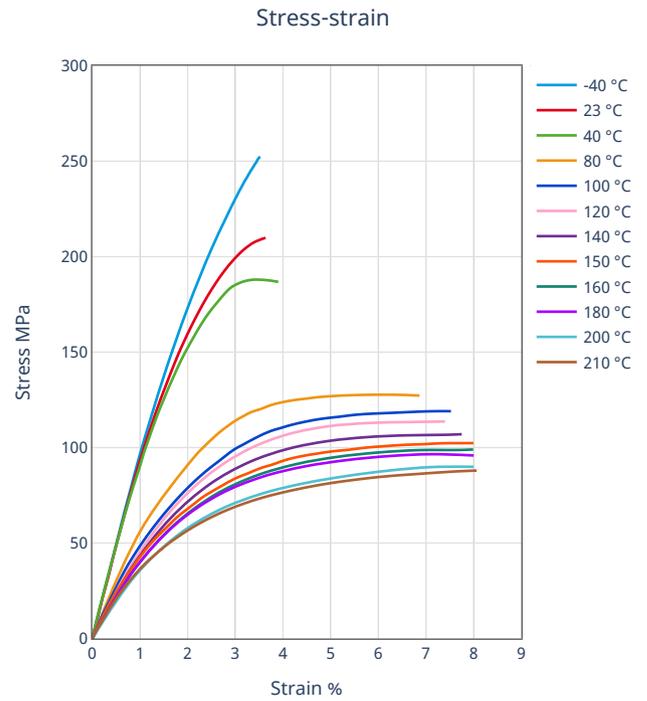
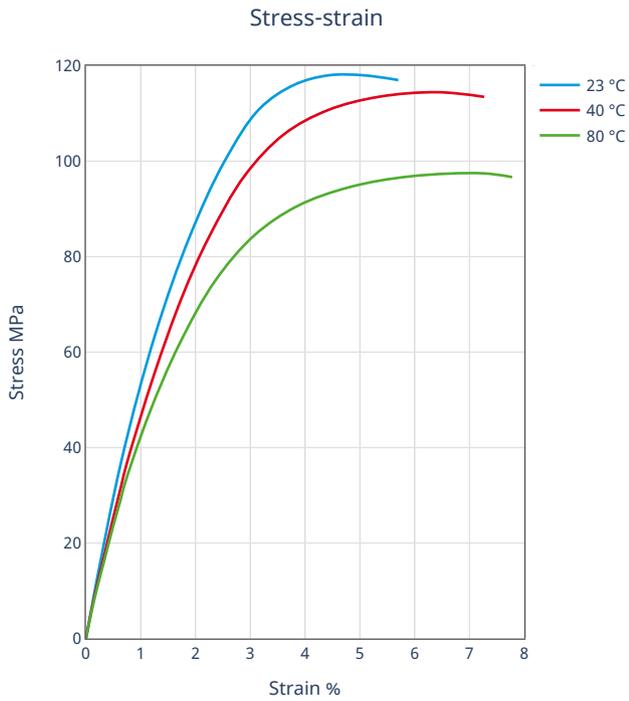
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Thermal Properties	Value	Unit	Standard
Melting temperature, 10°C/min	295	°C	ISO 11357-1/-3
Glass transition temperature, 10°C/min	75	°C	ISO 11357-1/-2
Temp. of deflection under load, 1.80 MPa	290	°C	ISO 75-1/-2
Temp. of deflection under load, 0.45 MPa	290	°C	ISO 75-1/-2
Vicat softening temperature, B	290	°C	ISO 306
Coeff. of linear therm. expansion, parallel	25	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal	60	E-6/K	ISO 11359-1/-2
Burning behav. at 1.5 mm nom. thickn.	HB	class	IEC 60695-11-10
Thickness tested	1.5	mm	
Yellow card available	yes		
Burning behav. at thickness h	HB	class	IEC 60695-11-10
Thickness tested	3	mm	
Yellow card available	yes		
Burning rate, FMVSS, thickness 1 mm	55	mm/min	ISO 3795 (FMVSS 302)
Oxygen index	22	%	ISO 4589-1/-2
Electrical Properties	Value	Unit	Standard
Relative permittivity, 100Hz	4.3		IEC 62631-2-1
Relative permittivity, 1MHz	4		IEC 62631-2-1
Dissipation factor, 100Hz	70	E-4	IEC 62631-2-1
Dissipation factor, 1MHz	200	E-4	IEC 62631-2-1
Volume resistivity	1E12	Ohm*m	IEC 62631-3-1
Surface resistivity	1E13	Ohm	IEC 62631-3-2
Electric strength	30	kV/mm	IEC 60243-1
Comparative tracking index	300		IEC 60112
Other Properties	Value	Unit	Standard
Water absorption	9.5	%	Sim. to ISO 62
Humidity absorption	2.6	%	Sim. to ISO 62
Density	1410	kg/m <sup>3</sup>	ISO 1183
Material Specific Properties	Value	Unit	Standard
Viscosity number	145	cm <sup>3</sup> /g	ISO 307, 1157, 1628

## Diagrams

# Stanyl® TW200F6

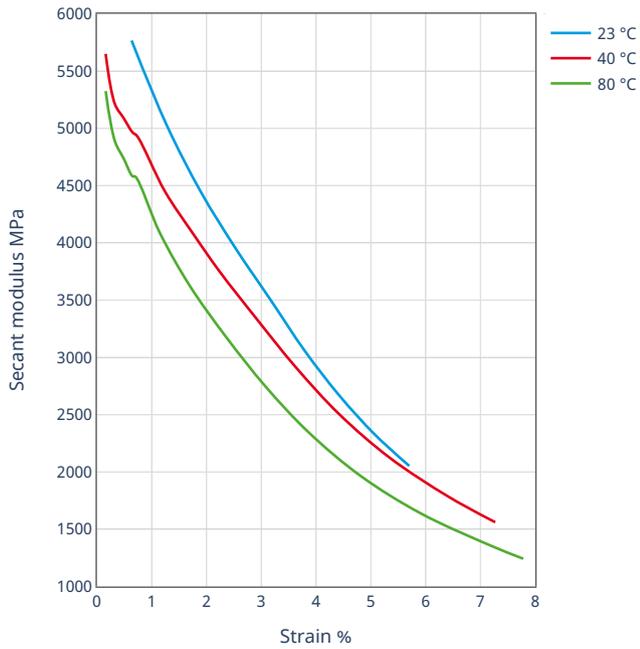
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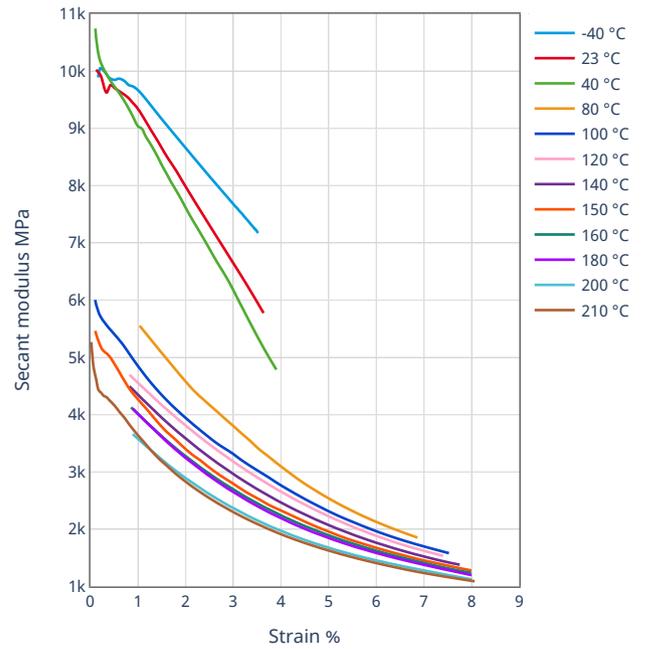
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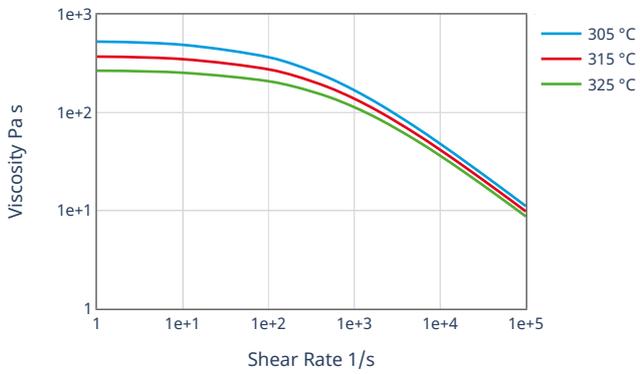
Secant modulus-strain



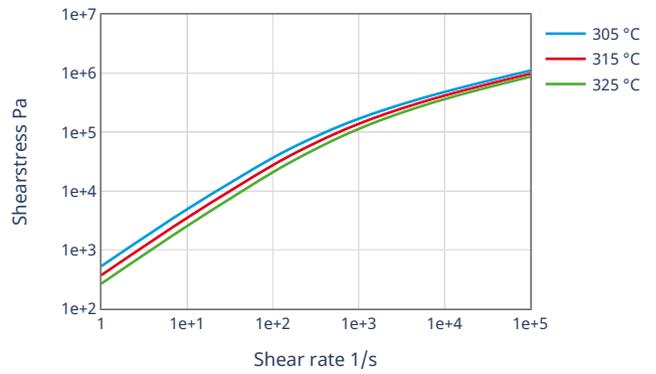
Secant modulus-strain



Viscosity-shear rate



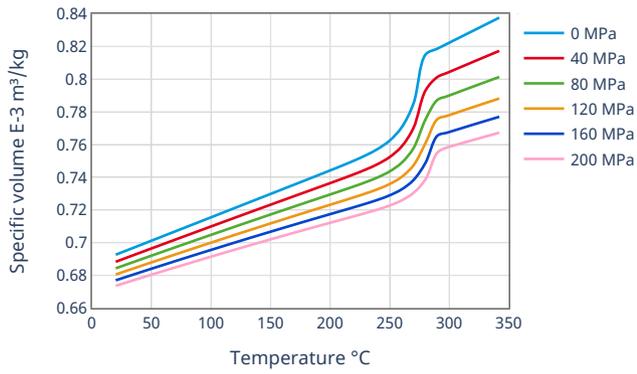
Shearstress-shear rate



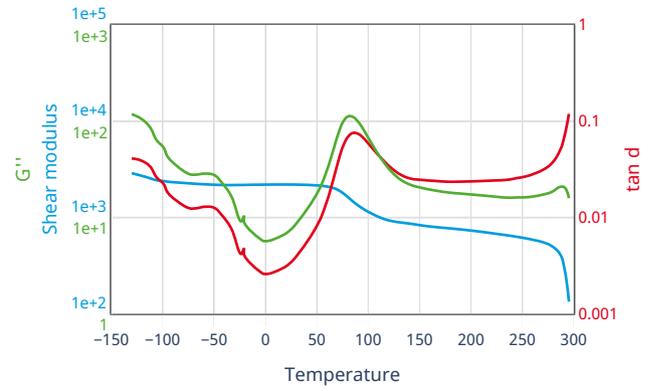
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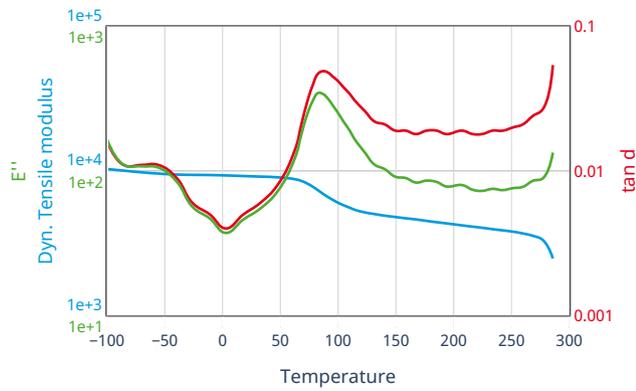
Spec. volume-Temperature (pVT)



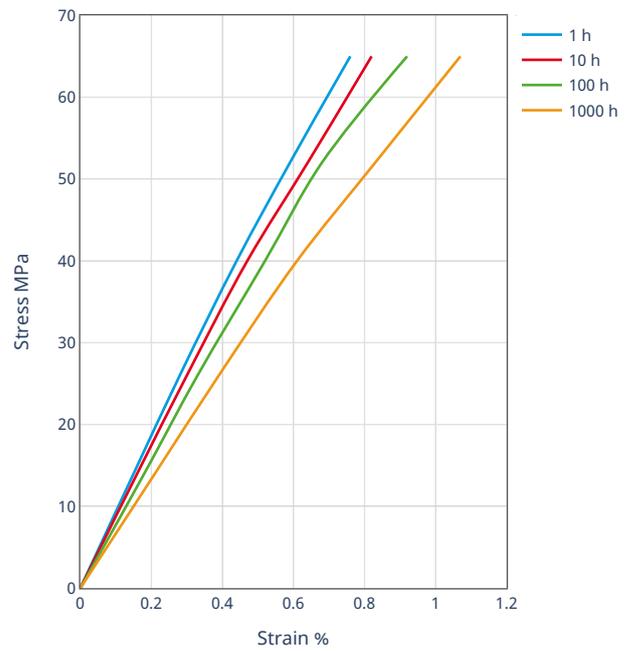
Dynamic shear modulus-temperature



Dynamic tensile modulus-temperature



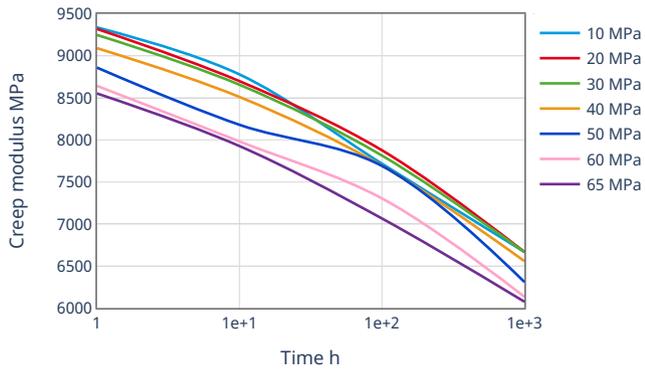
Stress-strain (isochronous) 23°C



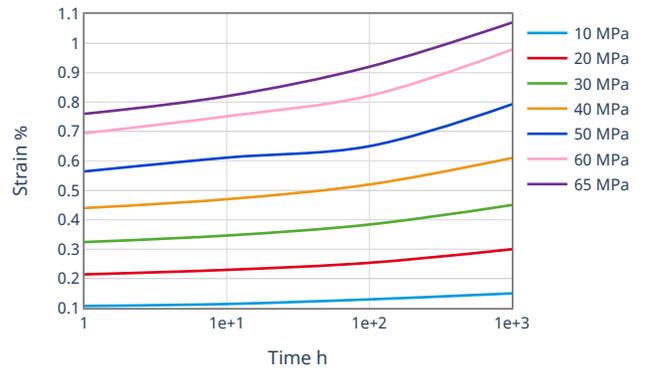
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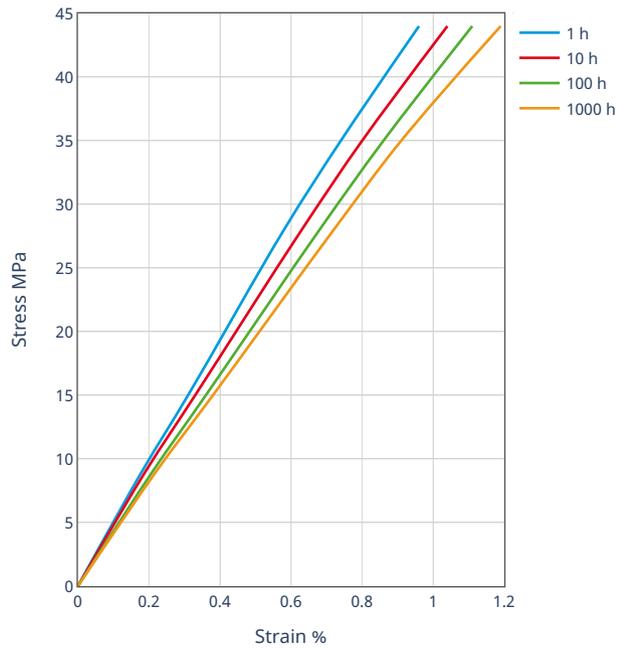
### Creep modulus-time 23°C



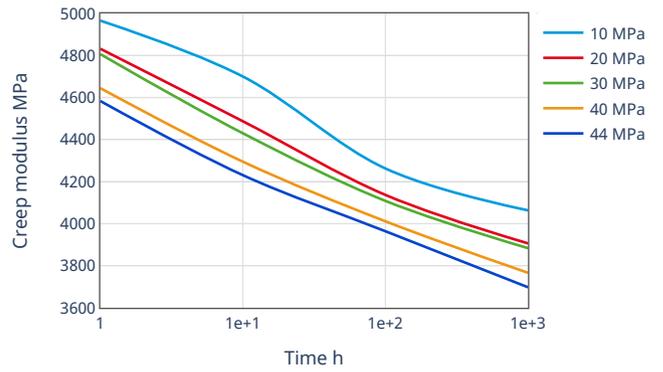
### Creep curve 23°C



### Stress-strain (isochronous) 100°C



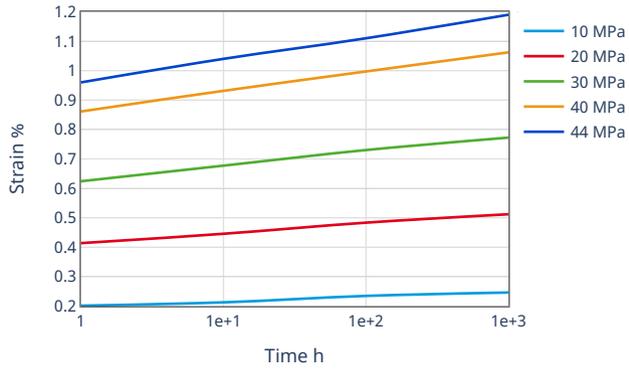
### Creep modulus-time 100°C



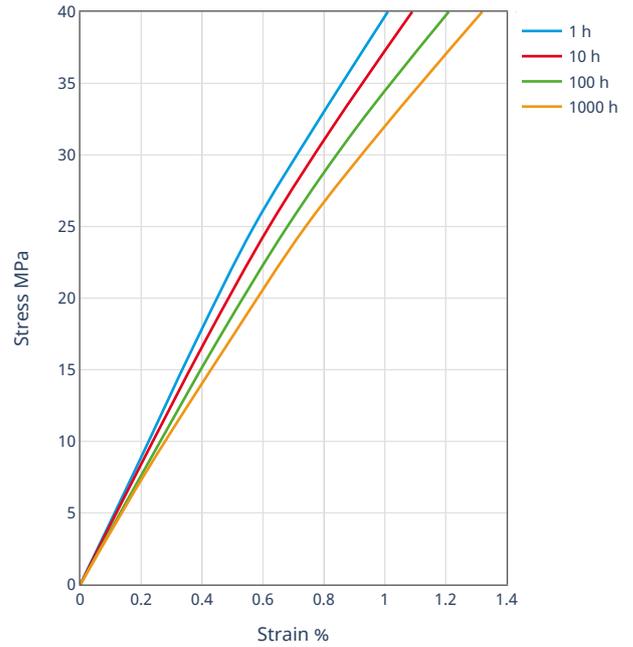
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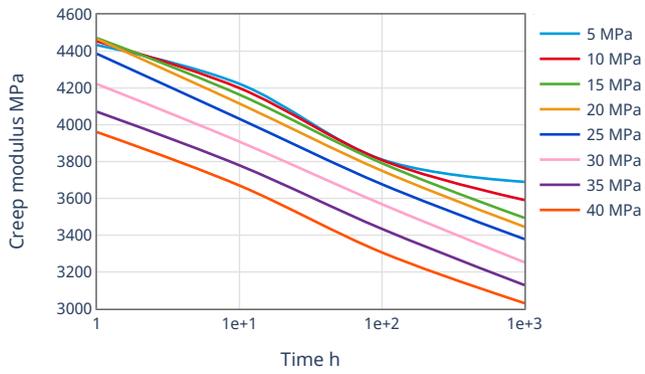
### Creep curve 100°C



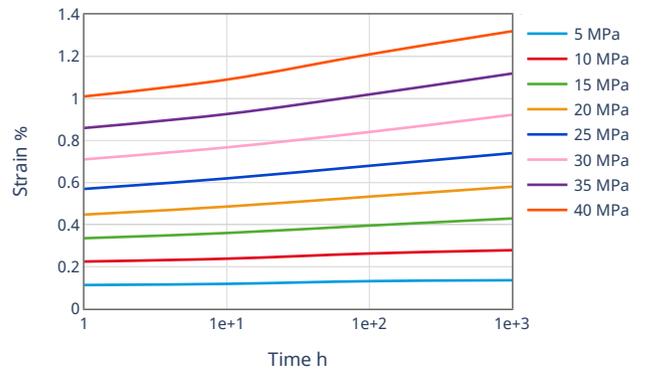
### Stress-strain (isochronous) 140°C



### Creep modulus-time 140°C



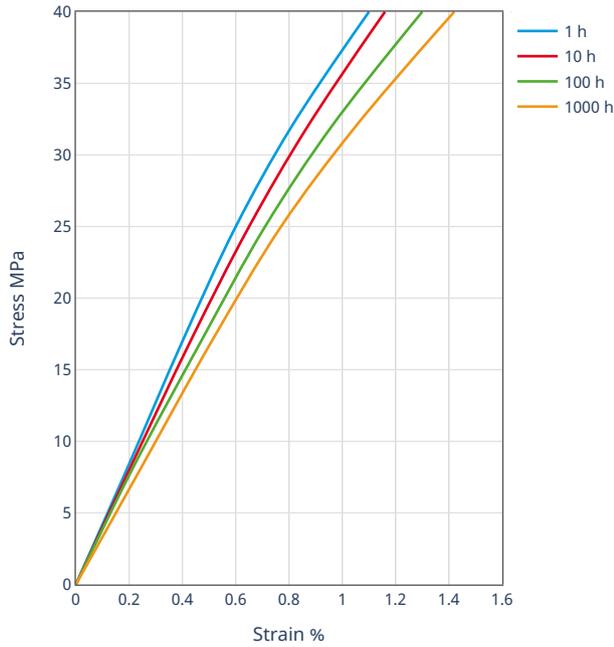
### Creep curve 140°C



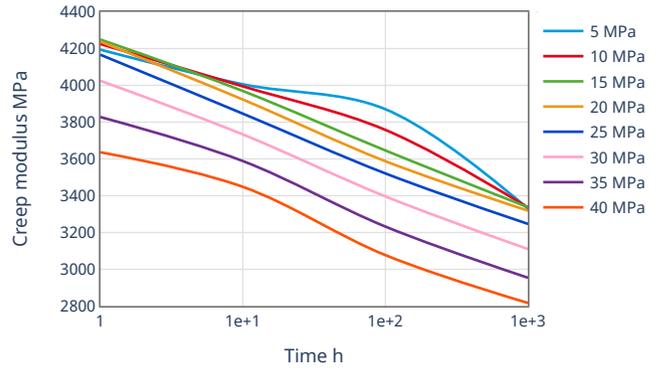
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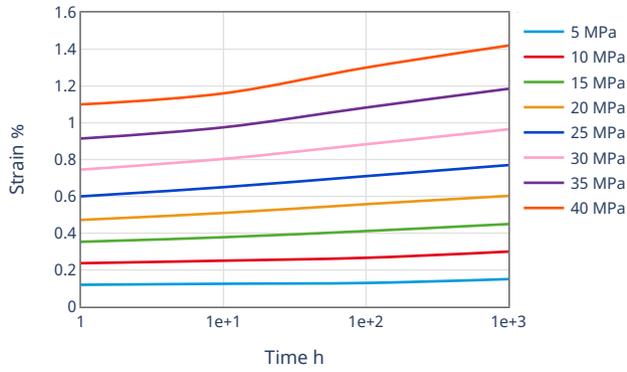
### Stress-strain (isochronous) 160°C



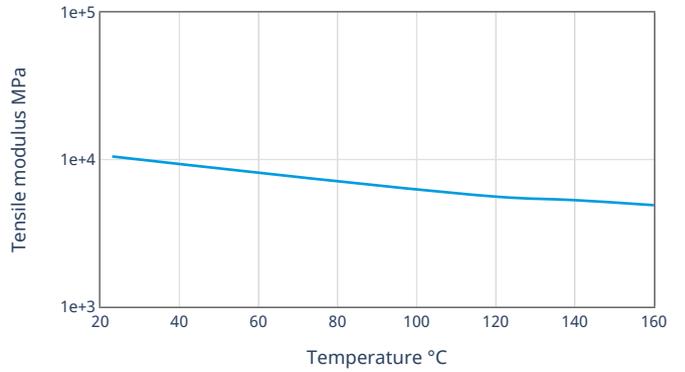
### Creep modulus-time 160°C



### Creep curve 160°C



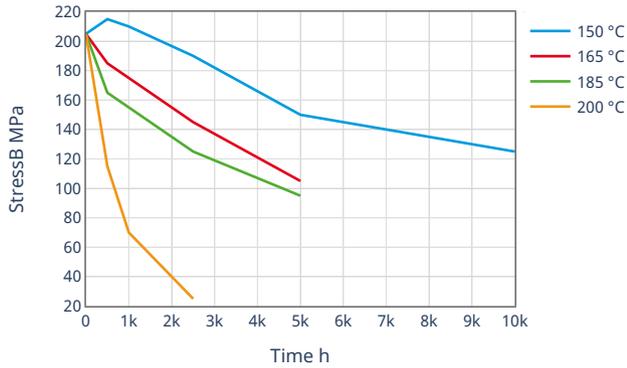
### Tensile modulus-temperature



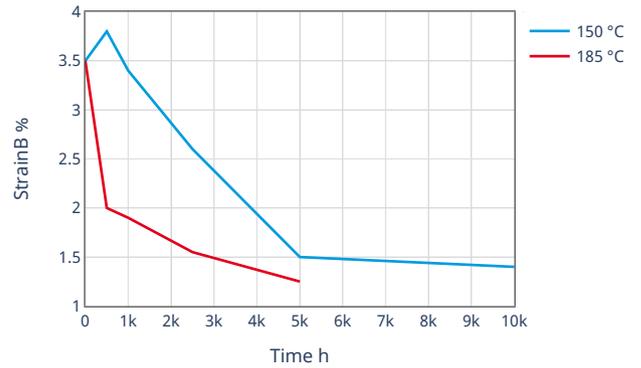
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LTHA-stress at break



LTHA-strain at break



## 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