TECHNICAL DATA SHEET

Stanyl® TW241F10

Envalior

PA46-GF50

Processing

Injection molding

Additives

Lubricants

Delivery Form

Pellets

Special Characteristics

Platable, Heat stabilized or stable to heat

Product Text

Product Information

50% Glass Reinforced, Heat Stabilized, Lubricated

ISO 1043 PA46-GF50

Stanyl® TW241F10 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. TW241F10 has an excellent track-record in gear applications and structural parts

Processing/Physical Characteristics	Value	Unit	Standard
Density of melt	1420	kg/m³	
Thermal conductivity of melt	0.391	W/(m K)	
Spec. heat capacity of melt	1990	J/(kg K)	
Eff. thermal diffusivity	1.39E-7	m²/s	

Mechanical Properties	Value	Unit	Standard
Tensile modulus	16000	MPa	ISO 527
Stress at break	250	MPa	ISO 527
Strain at break	2.7	%	ISO 527
Poisson's ratio	0.35		ISO 527
Tensile creep modulus, 1000h	8000	MPa	ISO 899-1
Charpy impact strength, +23°C	100	kJ/m²	ISO 179/1eU
Charpy impact strength, -30°C	90	kJ/m²	ISO 179/1eU
Charpy notched impact strength, +23°C	16	kJ/m²	ISO 179/1eA

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Mechanical Properties	Value	Unit	Standard
Charpy notched impact strength, -30°C	14	kJ/m²	ISO 179/1eA

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	40	E-6/K	ISO 11359-1/-2
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	6.75	%	Sim. to ISO 62
Humidity absorption	1.85	%	Sim. to ISO 62
Density	1620	kg/m³	ISO 1183

Material Specific Properties	Value	Unit	Standard
Viscosity number	140	cm³/g	ISO 307, 1157, 1628

Diagrams

Stanyl® TW241F10

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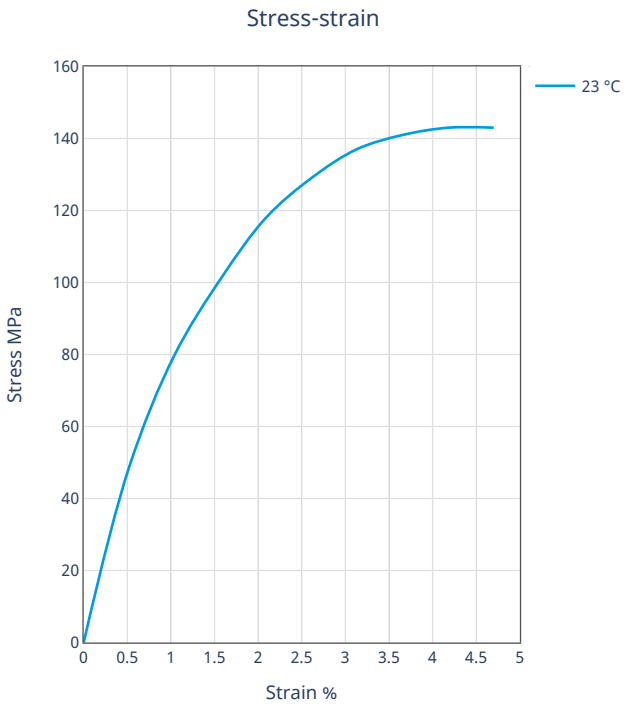

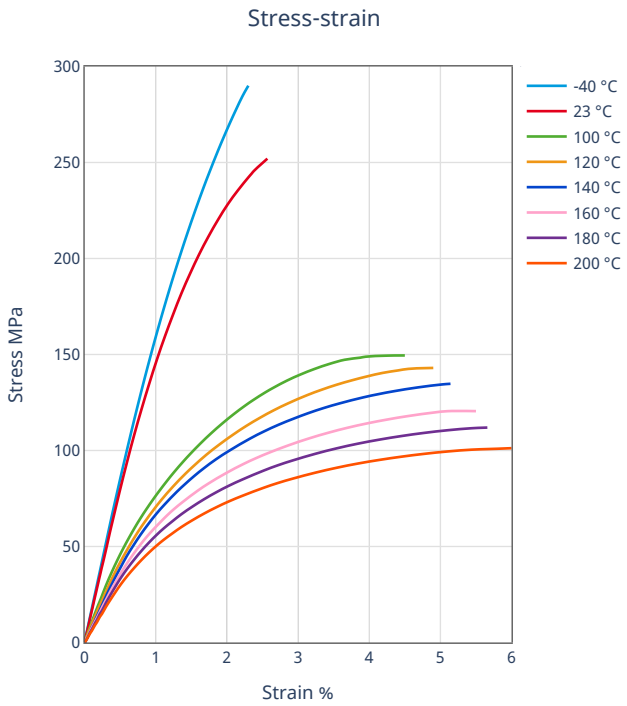

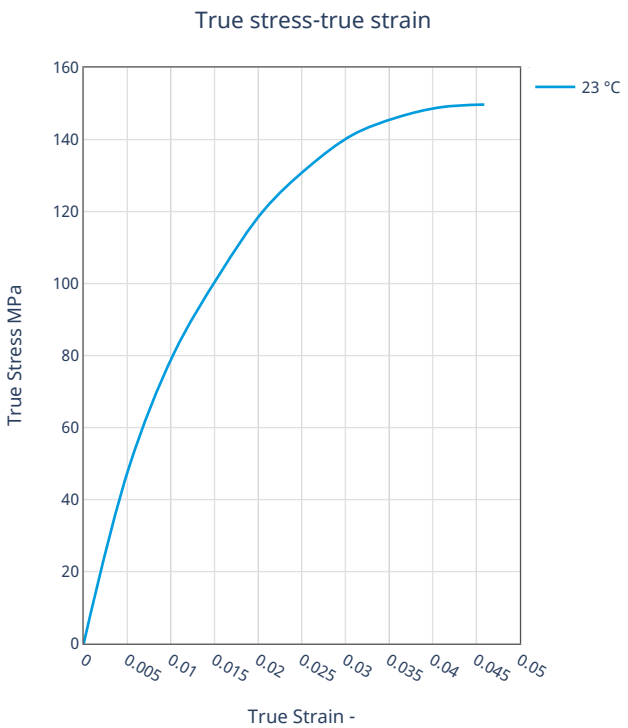

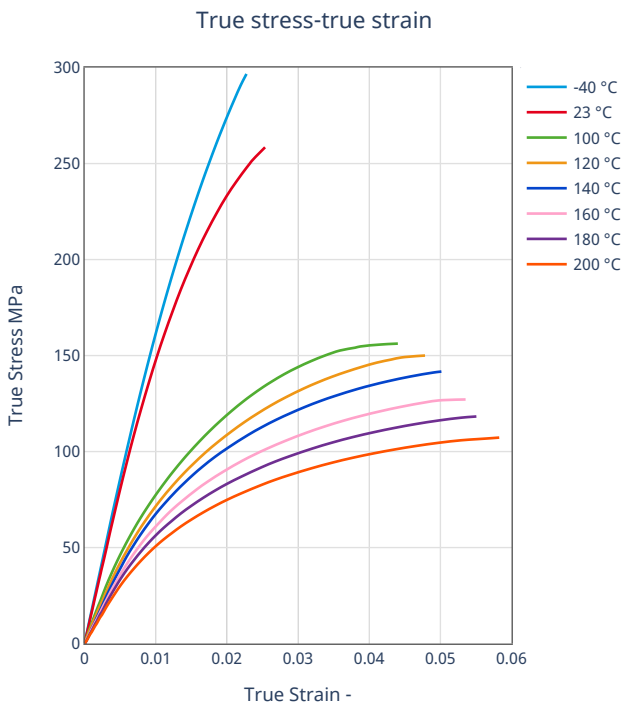

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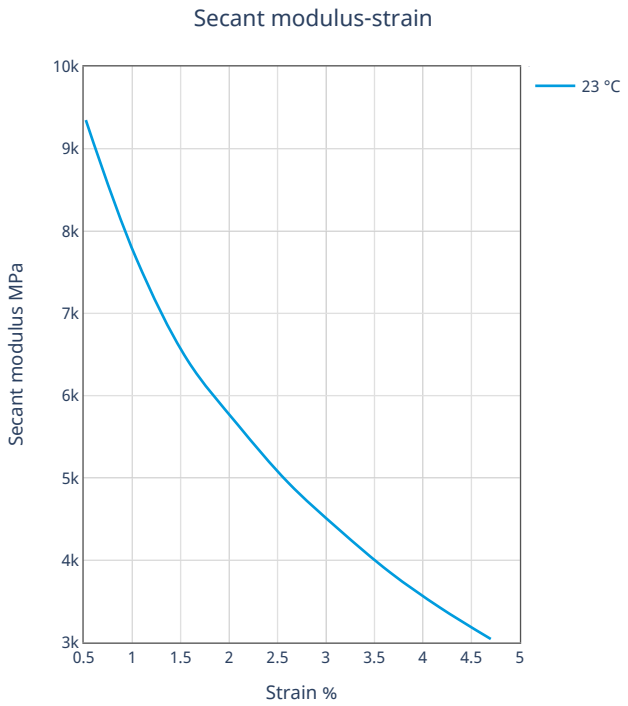

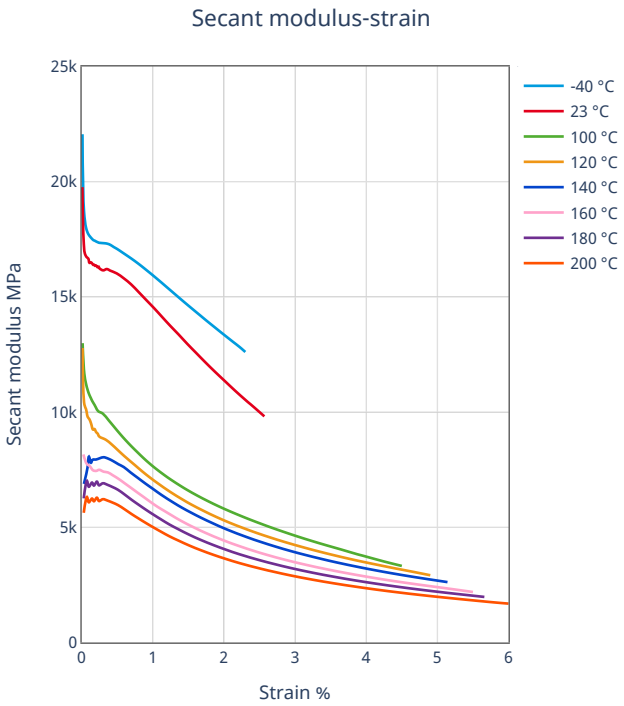

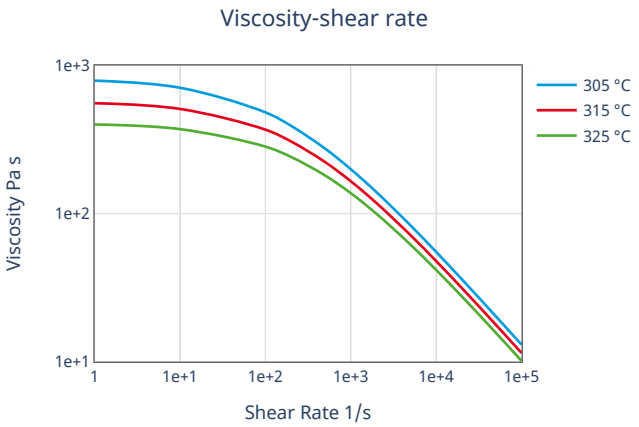

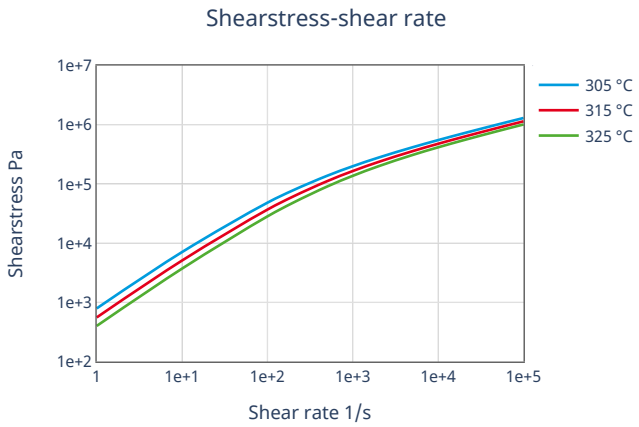

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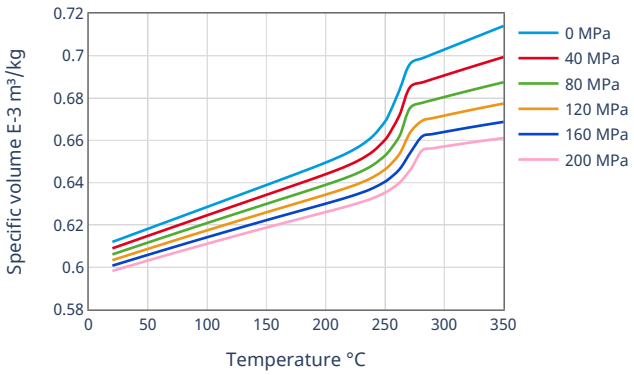
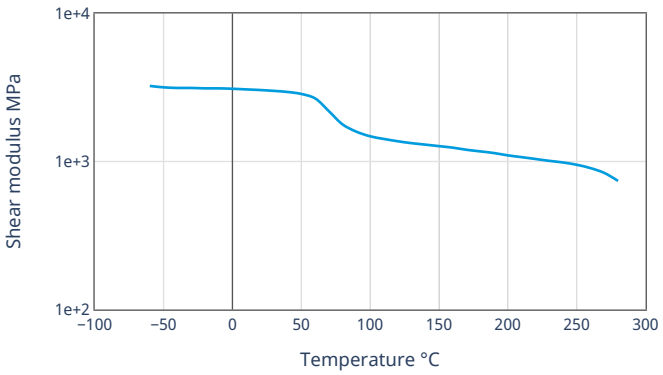
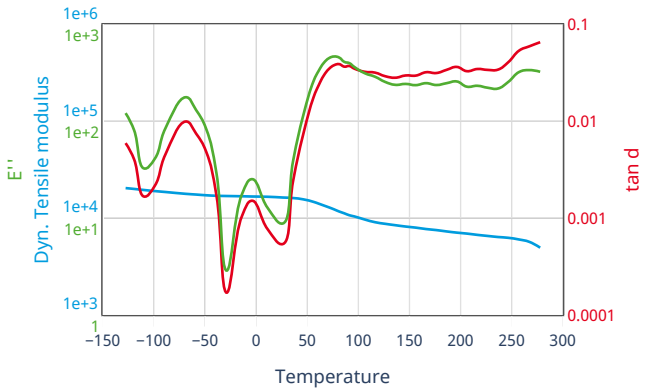
Spec. volume-Temperature (pVT)



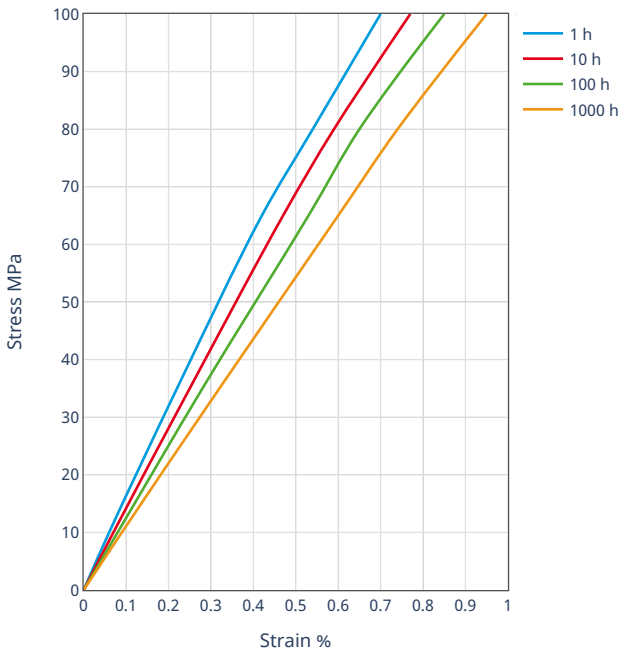
Dynamic shear modulus-temperature



Dynamic tensile modulus-temperature



Stress-strain (isochronous) 23°C



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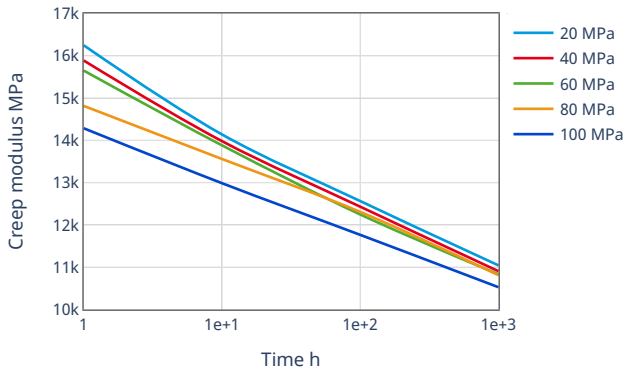
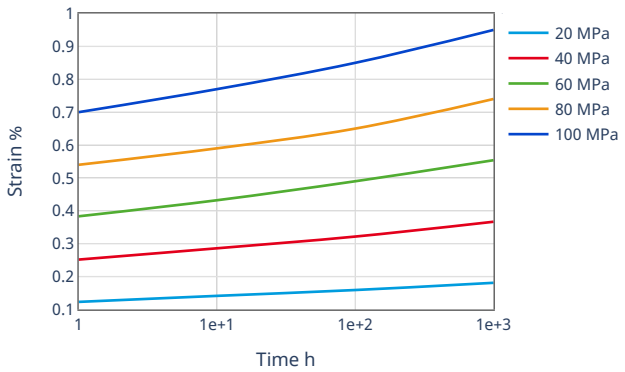
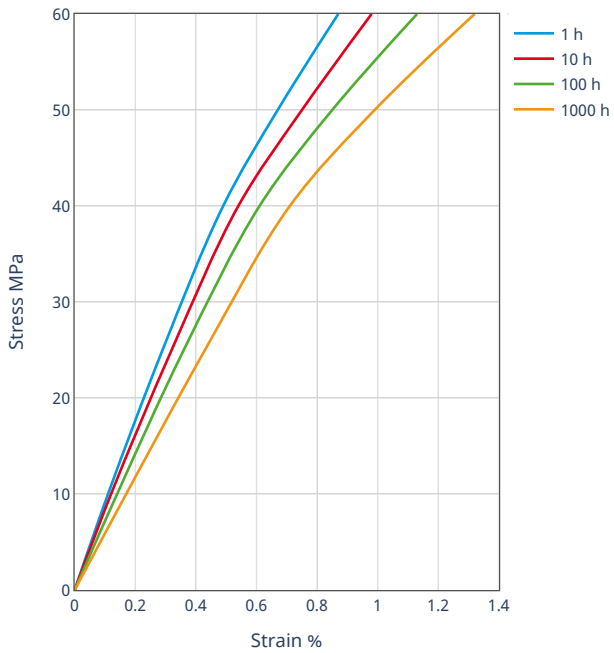
Creep modulus-time 23°C



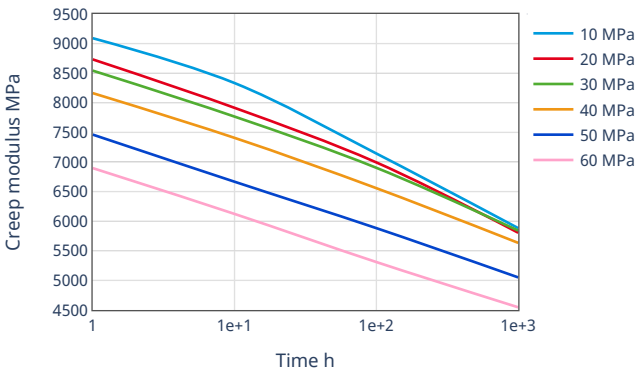
Creep curve 23°C



Stress-strain (isochronous) 160°C



Creep modulus-time 160°C



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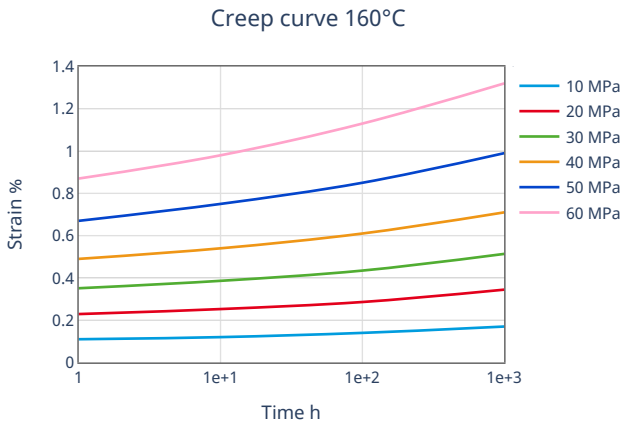

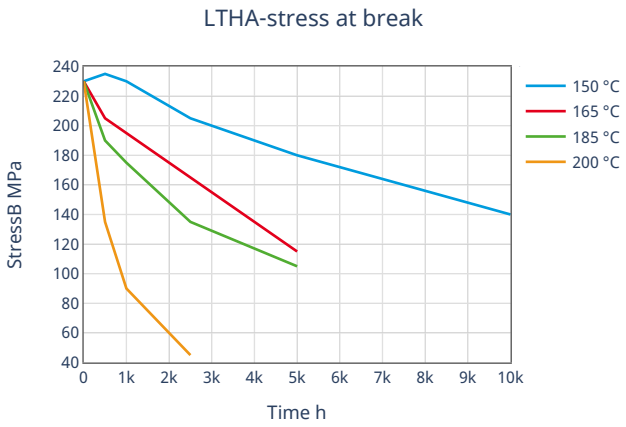

Processing Information

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