Stanyl® TW271F6

(PA46+PTFE)-GF30 Envalior

Product Texts

30% Glass Reinforced, Heat Stabilized, Wear and Friction Modified

ISO 1043 (PA46+PTFE)-GF30

Stanyl® TW271F6 is a friction-modified 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. TW271F6 has an excellent track-record in gear applications.

Mechanical properties	dry / cond	Unit	Test Standard
ISO Data			
Tensile Modulus	10500 / 6600	MPa	ISO 527
Stress at break	200 / 130	MPa	ISO 527
Strain at break	3.4 / 6	%	ISO 527
Charpy impact strength, +23°C	85 / 90	kJ/m²	ISO 179/1eU
Charpy impact strength, -30°C	65 / 70	kJ/m²	ISO 179/1eU
Charpy notched impact strength, +23°C	13 / 17	kJ/m²	ISO 179/1eA
Charpy notched impact strength, -30°C	11 / 11	kJ/m²	ISO 179/1eA

Thermal properties	dry / cond	Unit	Test Standard
ISO Data			
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, 50°C/h 50N	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 thickness h	HB / *	class	IEC 60695-11-10
Thickness tested	3.0 / *	mm	-
Yellow Card available	yes / *	-	-

Electrical properties	dry / cond	Unit	Test Standard
ISO Data			
Volume resistivity	1E12 / 1E7	Ohm*m	IEC 62631-3-1
Surface resistivity	* / 1E13	Ohm	IEC 62631-3-2
Comparative tracking index	400 / -	-	IEC 60112

Other properties	dry / cond	Unit	Test Standard
ISO Data			
Water absorption	7.4 / *	%	Sim. to ISO 62
Humidity absorption	2.2 / *	%	Sim. to ISO 62
Density	1530 / -	kg/m³	ISO 1183

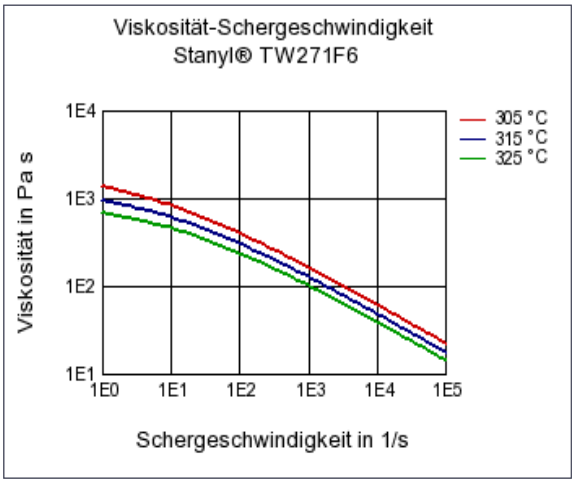
Material specific properties	dry / cond	Unit	Test Standard
ISO Data			
Viscosity number	145 / *	cm³/g	ISO 307, 1157, 1628

Rheological calculation properties	Value	Unit	Test Standard
ISO Data			
Density of melt	1320	kg/m³	-
Thermal conductivity of melt	0.319	W/(m K)	-
Spec. heat capacity of melt	1890	J/(kg K)	-

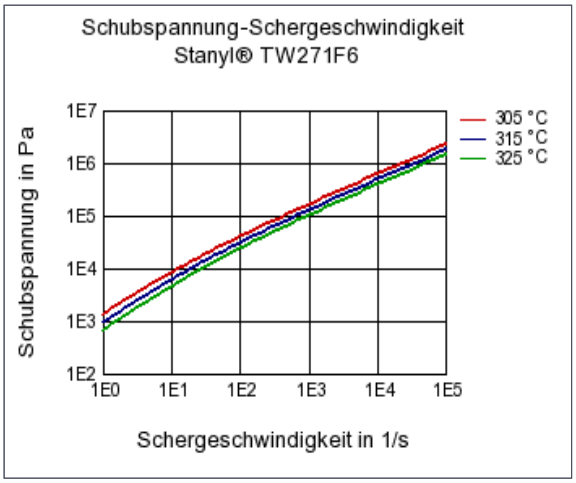
Eff. thermal diffusivity	1.26E-7	m²/s	-

Diagrams

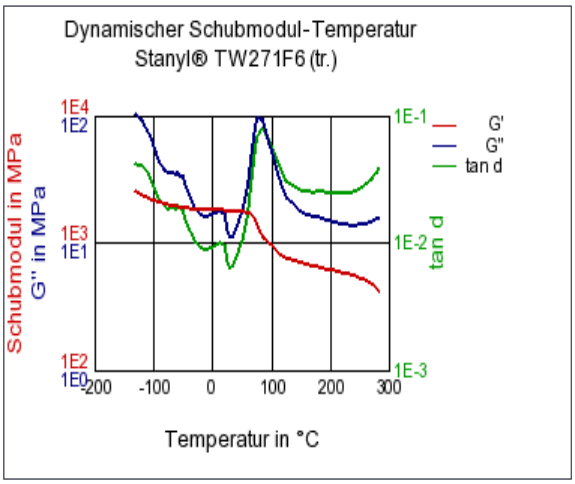
Viscosity-shear rate



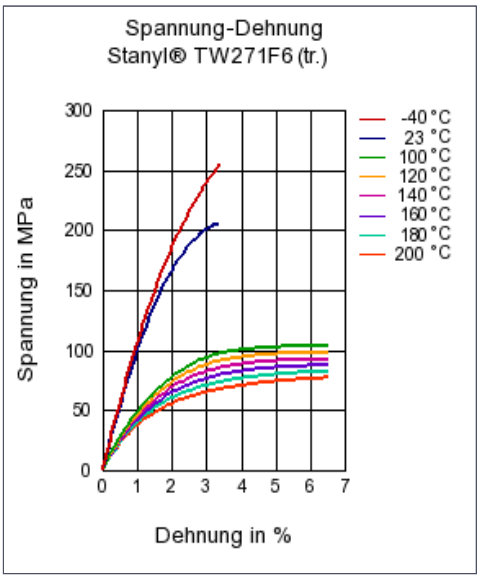
Shearstress-shear rate



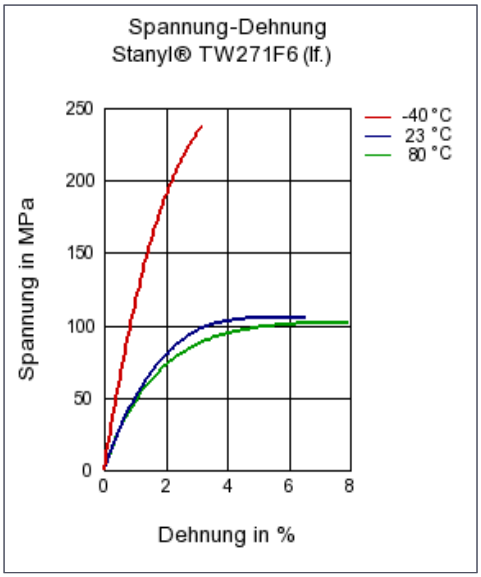
Dynamic Shear modulus-temperature



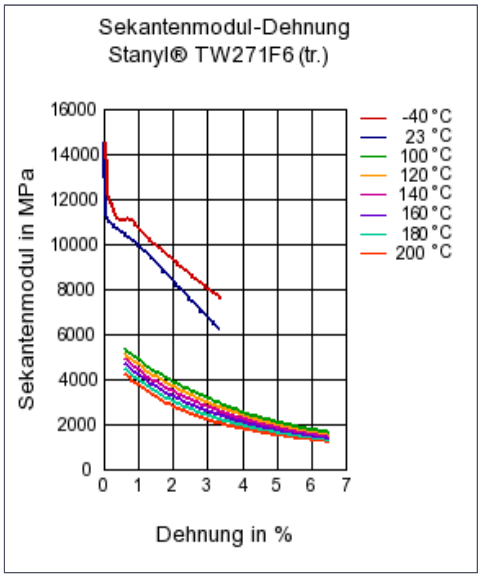
Stress-strain



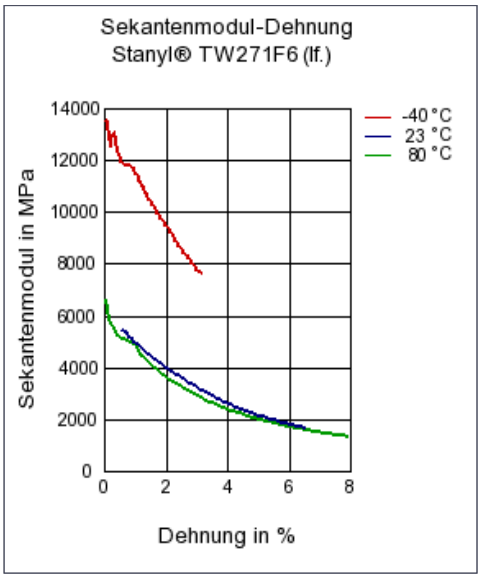
Stress-strain



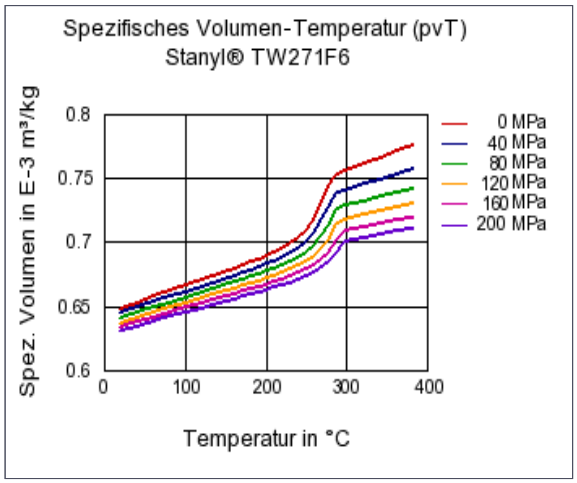
Secant modulus-strain



Secant modulus-strain



Specific volume-temperature (pvT)



Characteristics

Processing
Injection Molding

Special Characteristics
Platable, Heat stabilized or stable to heat

Delivery form
Pellets

Features
Tribologic Grade

Other text 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

Chemical Media Resistance

Alcohols
Ethanol (23 °C)

Hydrocarbons

- Toluene (23°C)

Ketones

- Acetone (23°C)

Ethers

- Diethyl ether (23°C)

Other

- Ethyl Acetate (23°C)
- Water (23°C)