

Stanyl® TW271F6

(PA46+PTFE)—GF30

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

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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.

PROPERTIES	TYPICAL DATA	UNIT	TEST METHOD
RHEOLOGICAL PROPERTIES			
	DRY / COND		
Molding shrinkage [parallel]	0.5 / *	%	Sim. to ISO 294-4
Molding shrinkage [normal]	1.3 / *	%	Sim. to ISO 294-4
MECHANICAL PROPERTIES			
	DRY / COND		
Tensile modulus	10500 / 6600	MPa	ISO 527-1/-2
Tensile modulus (120°C)	5250 / –	MPa	ISO 527-1/-2
Tensile modulus (160°C)	4750	MPa	ISO 527-1/-2
Tensile modulus (180°C)	4500	MPa	ISO 527-1/-2
Tensile modulus (200°C)	4250	MPa	ISO 527-1/-2
Stress at break	200 / 130	MPa	ISO 527-1/-2
Stress at break (120°C)	100 / –	MPa	ISO 527-1/-2
Stress at break (160°C)	85	MPa	ISO 527-1/-2
Stress at break (180°C)	80	MPa	ISO 527-1/-2
Stress at break (200°C)	75	MPa	ISO 527-1/-2
Strain at break	3.4 / 6	%	ISO 527-1/-2
Strain at break (120°C)	6.5 / –	%	ISO 527-1/-2
Strain at break (160°C)	6.5	%	ISO 527-1/-2
Strain at break (180°C)	6.5	%	ISO 527-1/-2
Strain at break (200°C)	6.5	%	ISO 527-1/-2
Flexural modulus	9000 / 6000	MPa	ISO 178
Flexural modulus (120°C)	5400	MPa	ISO 178

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PROPERTIES	TYPICAL DATA	UNIT	TEST METHOD
Flexural modulus (160°C)	5000	MPa	ISO 178
Flexural strength	280 / 150	MPa	ISO 178
Flexural strength (120°C)	135	MPa	ISO 178
Flexural strength (160°C)	120	MPa	ISO 178
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
Izod notched impact strength (+23°C)	13 / 17	kJ/m²	ISO 180/1A
Izod notched impact strength (-40°C)	11 / 11	kJ/m²	ISO 180/1A

THERMAL PROPERTIES	DRY / COND		
Melting temperature (10°C/min)	295 / *	°C	ISO 11357-1/-3
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
Coeff. of linear therm. expansion (parallel)	0.16 / *	E-4/°C	ISO 11359-1/-2
Coeff. of linear therm. expansion (normal)	0.69 / *	E-4/°C	ISO 11359-1/-2
Coeff. of linear therm. expansion (parallel)	0.25	E-4/°C	ASTM D696
Coeff. of linear therm. expansion (normal)	0.6	E-4/°C	ASTM D696
Burning Behav. at 3.0 mm nom. thickn.	HB / *	class	IEC 60695-11-10
Thickness tested	3 / *	mm	IEC 60695-11-10
UL recognition	Yes / *	—	—
Thermal Index 5000 hrs	177	°C	IEC 60216/ISO 527-1/-2

ELECTRICAL PROPERTIES	DRY / COND		
Volume resistivity	1E12 / 1E7	Ohm*m	IEC 62631-3-1
Comparative tracking index	400 / —	V	IEC 60112

OTHER PROPERTIES	DRY / COND
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Property Data

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PROPERTIES	TYPICAL DATA	UNIT	TEST METHOD
Humidity absorption	2.2 / *	%	Sim. to ISO 62
Density	1530 / –	kg/m³	ISO 1183

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