Property Data

Envalior
Imagine the Future

Stanyl® TW271F6

(PA46+PTFE)–GF30

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

Print Date: 2026–09–10

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 1.5 mm nom. thickn.	HB / *	class	IEC 60695–11–10
Thickness tested	1.5 / *	mm	IEC 60695–11–10
UL recognition	Yes / *	–	–
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

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PROPERTIES	TYPICAL DATA	UNIT	TEST METHOD
Comparative tracking index	400 / –	V	IEC 60112
OTHER PROPERTIES	**DRY / COND**		
Humidity absorption	2.2 / *	%	Sim. to ISO 62
Density	1530 / –	kg/m³	ISO 1183

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