

Stanyl® TW241F10

PA46—GF50

50% Glass Fiber Reinforced, Heat Stabilized, Lubricated

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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

PROPERTIES	TYPICAL DATA	UNIT	TEST METHOD
RHEOLOGICAL PROPERTIES			
	DRY / COND		
Molding shrinkage [parallel]	0.4 / *	%	Sim. to ISO 294-4
Molding shrinkage [normal]	0.9 / *	%	Sim. to ISO 294-4
MECHANICAL PROPERTIES			
	DRY / COND		
Tensile modulus	16000 / 10000	MPa	ISO 527-1/-2
Tensile modulus (120°C)	8500 / –	MPa	ISO 527-1/-2
Tensile modulus (160°C)	7200	MPa	ISO 527-1/-2
Tensile modulus (180°C)	6600	MPa	ISO 527-1/-2
Tensile modulus (200°C)	6000	MPa	ISO 527-1/-2
Stress at break	250 / 150	MPa	ISO 527-1/-2
Stress at break (120°C)	140 / –	MPa	ISO 527-1/-2
Stress at break (160°C)	120	MPa	ISO 527-1/-2
Stress at break (180°C)	110	MPa	ISO 527-1/-2
Stress at break (200°C)	100	MPa	ISO 527-1/-2
Strain at break	2.7 / 5	%	ISO 527-1/-2
Strain at break (120°C)	5 / –	%	ISO 527-1/-2
Strain at break (160°C)	5.5	%	ISO 527-1/-2
Strain at break (180°C)	5.5	%	ISO 527-1/-2
Strain at break (200°C)	6	%	ISO 527-1/-2
Flexural modulus	15000 / 9000	MPa	ISO 178
Flexural modulus (120°C)	7300	MPa	ISO 178

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Flexural modulus (160°C)	6500	MPa	ISO 178
Flexural strength	380 / 250	MPa	ISO 178
Flexural strength (120°C)	180	MPa	ISO 178
Flexural strength (160°C)	150	MPa	ISO 178
Charpy impact strength (+23°C)	100 / 110	kJ/m²	ISO 179/1eU
Charpy impact strength (-30°C)	90 / 100	kJ/m²	ISO 179/1eU
Charpy notched impact strength (+23°C)	16 / 24	kJ/m²	ISO 179/1eA
Charpy notched impact strength (-30°C)	14 / 14	kJ/m²	ISO 179/1eA
Izod notched impact strength (+23°C)	16 / 24	kJ/m²	ISO 180/1A
Izod notched impact strength (-40°C)	14 / 14	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)	0.13 / *	E-4/°C	ISO 11359-1/-2
Coeff. of linear therm. expansion (normal)	0.66 / *	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)	0.4	E-4/°C	ASTM D696
Thermal conductivity through plane	0.48	W/(m K)	ASTM E1461
Relative Temperature Index – electrical	65	°C	UL746B
RTI electrical (Thickness (1) tested)	0.75	mm	UL746B
Thermal Index 5000 hrs	177	°C	IEC 60216/ISO 527-1/-2

ELECTRICAL PROPERTIES	DRY / COND		
Volume resistivity	1E12 / 1E8	Ohm*m	IEC 62631-3-1
Electric strength	30 / 20	kV/mm	IEC 60243-1
Comparative tracking index	300 / –	V	IEC 60112
Relative permittivity (100Hz)	4.3 / 16	–	IEC 62631-2-1

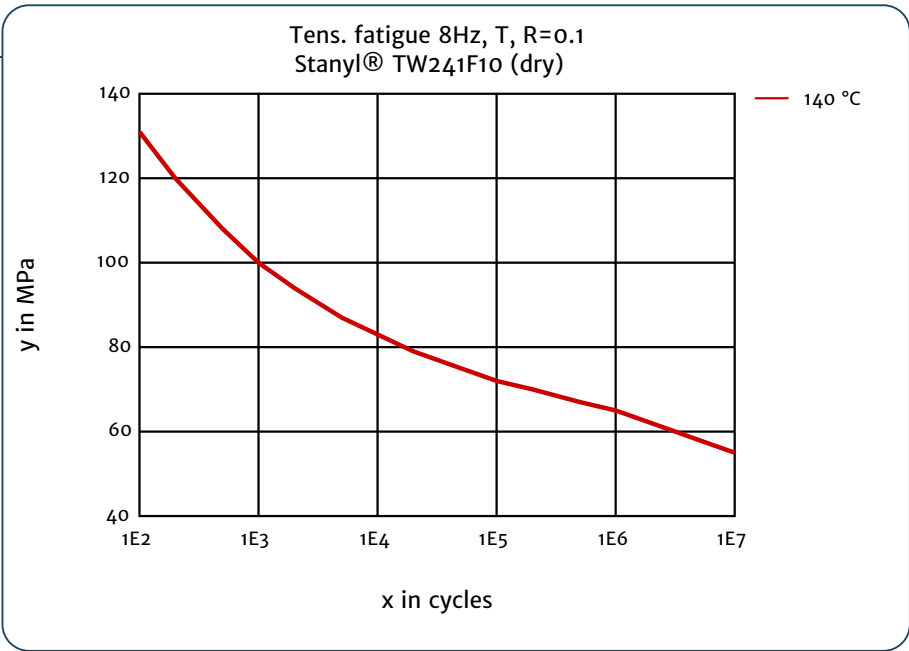
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Relative permittivity (1 MHz)	4 / 4.7	—	IEC 62631-2-1
OTHER PROPERTIES			
	DRY / COND		
Humidity absorption	1.85 / *	%	Sim. to ISO 62
Density	1620 / —	kg/m³	ISO 1183

Tens. fatigue 8Hz, T, R=0.1 ,
dry



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