Property Data

Envalior
Imagine the Future

Stanyl® TW241F10

PA46–GF50

50% Glass Reinforced, Heat Stabilized, Lubricated

Print Date: 2024–03–27

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

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PROPERTIES	TYPICAL DATA	UNIT	TEST METHOD
Flexural modulus (120°C)	7300	MPa	ISO 178
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)	0.25 / *	E–4/°C	ISO 11359–1/–2
Coeff. of linear therm. expansion (normal)	0.4 / *	E–4/°C	ISO 11359–1/–2
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
Relative permittivity (1 MHz)	4 / 4.7	–	IEC 62631–2–1

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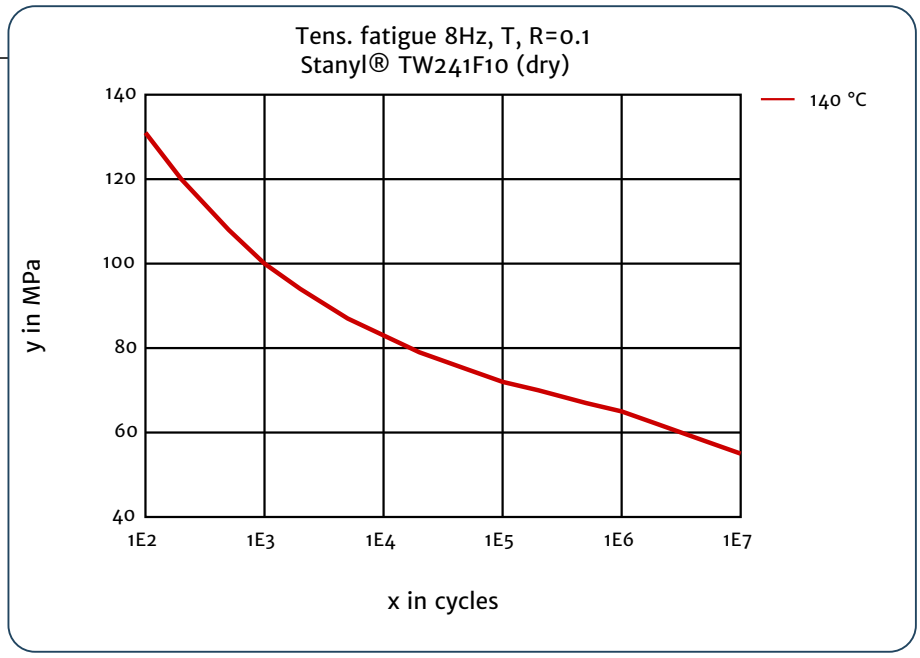
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PROPERTIES	TYPICAL DATA	UNIT	TEST METHOD
OTHER PROPERTIES	**DRY / COND**		
Humidity absorption	1.85 / *	%	Sim. to ISO 62
Density	1620 / –	kg/m³	ISO 1183

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



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