

Stanyl® TW441

PA46

High Viscosity, Heat Stabilized, Lubricated

Stanyl® TW441 is a non-reinforced high heat polyamide that offers excellent wear & friction properties in combination with outstanding creep resistance, strength, stiffness and fatigue resistance especially at high temperatures in combination with cycle-time advantages and excellent flow.

Properties	Typical Data	Unit	Test Method
Rheological properties			
	dry / cond		
Molding shrinkage [parallel]	2 / *	%	Sim. to ISO 294-4
Molding shrinkage [normal]	2 / *	%	Sim. to ISO 294-4
Mechanical properties			
	dry / cond		
Tensile modulus	3300 / 1000	MPa	ISO 527-1/-2
Tensile modulus (120°C)	800 / -	MPa	ISO 527-1/-2
Tensile modulus (160°C)	650	MPa	ISO 527-1/-2
Tensile modulus (180°C)	600	MPa	ISO 527-1/-2
Tensile modulus (200°C)	500	MPa	ISO 527-1/-2
Yield stress	100 / 55	MPa	ISO 527-1/-2
Yield stress (120°C)	50	MPa	ISO 527-1/-2
Yield stress (160°C)	40	MPa	ISO 527-1/-2
Yield stress (180°C)	35	MPa	ISO 527-1/-2
Yield stress (200°C)	30	MPa	ISO 527-1/-2
Nominal strain at break	40 / >50	%	ISO 527-1/-2
Nominal strain at break (120°C)	>50	%	ISO 527-1/-2
Nominal strain at break (160°C)	>50	%	ISO 527-1/-2
Nominal strain at break (180°C)	>50	%	ISO 527-1/-2
Nominal strain at break (200°C)	>50	%	ISO 527-1/-2
Flexural modulus	3000 / 900	MPa	ISO 178



Property Data

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Properties	Typical Data	Unit	Test Method
Flexural modulus (120°C)	800	MPa	ISO 178
Flexural modulus (160°C)	600	MPa	ISO 178
Flexural strength	150 / 50	MPa	ISO 178
Flexural strength (120°C)	50	MPa	ISO 178
Flexural strength (160°C)	40	MPa	ISO 178
Charpy impact strength (+23°C)	N / N	kJ/m ²	ISO 179/1eU
Charpy impact strength (-30°C)	N / N	kJ/m ²	ISO 179/1eU
Charpy notched impact strength (+23°C)	12 / 45	kJ/m ²	ISO 179/1eA
Izod notched impact strength (+23°C)	10 / 40	kJ/m ²	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)	190 / *	°C	ISO 75-1/-2
Temp. of deflection under load (0.45 MPa)	280 / *	°C	ISO 75-1/-2
Coeff. of linear therm. expansion (parallel)	0.85 / *	E-4/°C	ISO 11359-1/-2
Coeff. of linear therm. expansion (normal)	1.1 / *	E-4/°C	ISO 11359-1/-2
Thermal Index 5000 hrs	152	°C	IEC 60216/ISO 527-1/-2

Electrical properties

dry / cond

Volume resistivity	1E13 / 1E7	Ohm*m	IEC 62631-3-1
Electric strength	25 / 15	kV/mm	IEC 60243-1
Comparative tracking index	400 / -	V	IEC 60112
Relative permittivity (100Hz)	3.9 / 22	-	IEC 62631-2-1
Relative permittivity (1 MHz)	3.6 / 4.5	-	IEC 62631-2-1

Other properties

dry / cond

Humidity absorption	3.7 / *	%	Sim. to ISO 62
Density	1180 / -	kg/m ³	ISO 1183



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

