Property Data

Envalior
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Stanyl® TC502

PA46–GF15

Thermal conductive material

Print Date: 2024–03–27

Stanyl® TC502 is thermal conductive high heat polyamide designed for thermal management of electrical components with demanding conductivity levels.

PROPERTIES	TYPICAL DATA	UNIT	TEST METHOD
RHEOLOGICAL PROPERTIES	**DRY / COND**		
Molding shrinkage (parallel)	0.6 / *	%	ISO 294–4
Molding shrinkage (normal)	1.2 / *	%	ISO 294–4
MECHANICAL PROPERTIES	**DRY / COND**		
Tensile modulus	10000 / 4500	MPa	ISO 527–1/–2
Tensile modulus (120°C)	3300 / –	MPa	ISO 527–1/–2
Tensile modulus (160°C)	2800	MPa	ISO 527–1/–2
Tensile modulus (180°C)	2500	MPa	ISO 527–1/–2
Stress at break	65 / 45	MPa	ISO 527–1/–2
Stress at break (120°C)	33 / –	MPa	ISO 527–1/–2
Stress at break (160°C)	27	MPa	ISO 527–1/–2
Stress at break (180°C)	23	MPa	ISO 527–1/–2
Strain at break	1 / 2	%	ISO 527–1/–2
Strain at break (120°C)	2 / –	%	ISO 527–1/–2
Strain at break (160°C)	2.1	%	ISO 527–1/–2
Strain at break (180°C)	2.1	%	ISO 527–1/–2
Flexural modulus	9400 / 5200	MPa	ISO 178
Flexural modulus (120°C)	3700	MPa	ISO 178
Flexural modulus (160°C)	3200	MPa	ISO 178
Flexural strength	110 / 75	MPa	ISO 178
Flexural strength (120°C)	60	MPa	ISO 178

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PROPERTIES	*TYPICAL DATA*	*UNIT*	*TEST METHOD*
Flexural strength (160°C)	45	MPa	ISO 178
Charpy impact strength (+23°C)	10 / 13	kJ/m²	ISO 179/1eU
Charpy impact strength (–30°C)	10 / 10	kJ/m²	ISO 179/1eU
Charpy notched impact strength (+23°C)	4 / 6	kJ/m²	ISO 179/1eA
Charpy notched impact strength (–30°C)	4 / 4	kJ/m²	ISO 179/1eA
THERMAL PROPERTIES	***DRY / COND***		
Melting temperature (10°C/min)	295 / *	°C	ISO 11357–1/–3
Coeff. of linear therm. expansion (parallel)	0.25 / *	E–4/°C	ISO 11359–1/–2
Coeff. of linear therm. expansion (normal)	0.35 / *	E–4/°C	ISO 11359–1/–2
Thermal conductivity in plane	14	W/(m K)	ASTM E1461
Thermal conductivity through plane	2.1	W/(m K)	ASTM E1461
ELECTRICAL PROPERTIES	***DRY / COND***		
Volume resistivity	10000 / –	Ohm*m	IEC 62631–3–1
OTHER PROPERTIES	***DRY / COND***		
Humidity absorption	1.9 / *	%	Sim. to ISO 62
Density	1480 / –	kg/m³	ISO 1183