TECAST L black - Stock Shapes (rods, plates, tubes)

Chemical Designation
PA 6 C (Cast polyamide 6)

Colour
black opaque

Density
1.14 g/cm^3

Fillers
oil

Data generated directly after machining
(standard climate Germany).

Main features
- good slide and wear properties
- high toughness
- good wear properties
- resistant to many oils, greases and fuels
- high strength

Target Industries
- mechanical engineering
- automotive industry
- heavy duty industry

Mechanical properties	parameter	value	unit	norm		comment
Tensile strength	50mm/min	70	MPa	DIN EN ISO 527-2		(1) For tensile test: specimen type 1b (2) For flexural test: support span 64mm, norm specimen. (3) Specimen 10x10x10mm (4) Specimen 10x10x50mm, modulus range between 0.5 and 1% compression. (5) For Charpy test: support span 64mm, norm specimen. n.b. = not broken
Modulus of elasticity (tensile test)	1mm/min	3100	MPa	DIN EN ISO 527-2	1)	
Tensile strength at yield	50mm/min	68	MPa	DIN EN ISO 527-2		
Elongation at yield (tensile test)	50mm/min	4	%	DIN EN ISO 527-2		
Elongation at break (tensile test)	50mm/min	50	%	DIN EN ISO 527-2		
Flexural strength	2mm/min, 10 N	95	MPa	DIN EN ISO 178	2)	
Modulus of elasticity (flexural test)	2mm/min, 10 N	2900	MPa	DIN EN ISO 178		
Compression strength	1% / 2% / 5% 5mm/min, 10 N	21/37/78	MPa	EN ISO 604	3)	
Compression modulus	5mm/min, 10 N	2700	MPa	EN ISO 604	4)	
Impact strength (Charpy)	max. 7,5J	n.b.	kJ/m^2	DIN EN ISO 179-1eU	5)	
Notched impact strength (Charpy)	max. 7,5J	5	kJ/m^2	DIN EN ISO 179-1eA		
Shore hardness	D	80		DIN EN ISO 868		

Thermal properties	parameter	value	unit	norm		comment
Glass transition temperature		42	°C	DIN EN ISO 11357	1)	(1) Found in public sources. (2) Found in public sources. Individual testing regarding application conditions is mandatory.
Melting temperature		216	°C	DIN EN ISO 11357		
Service temperature	short term	170	°C		2)	
Service temperature	long term	100	°C			
Thermal expansion (CLTE)	23-60°C, long.	13	10^{-5} K^{-1}	DIN EN ISO 11359-1;2		
Thermal expansion (CLTE)	23-100°C, long.	13	10^{-5} K^{-1}	DIN EN ISO 11359-1;2		
Specific heat		1.7	J/(g*K)	ISO 22007-4:2008		
Thermal conductivity		0.37	W/(K*m)	ISO 22007-4:2008		

Electrical properties	parameter	value	unit	norm		comment
surface resistivity	Silver electrode, 23°C, 12% r.h.	10^{14}	Ω	DIN IEC 60093	1)	(1) Specimen in 20mm thickness (2) Due to the black colourant and moisture uptake of the material the electrical insulation properties cannot be 100% guaranteed, despite single measurements suggesting otherwise. (3) Specimen in 1mm thickness
volume resistivity	Silver electrode, 23°C, 12% r.h.	10^{14}	Ω*cm	DIN IEC 60093	2)	
Dielectric strength	23°C, 50% r.h.	21	kV/mm	ISO 60243-1	3)	
Resistance to tracking (CTI)	Platin electrode, 23°C, 50% r.h., solvent A	600	V	DIN EN 60112		

Other properties	parameter	value	unit	norm		comment
Water absorption	24h / 96h (23°C)	0.2 / 0.4	%	DIN EN ISO 62	1)	(1) Ø ca. 50mm, h=13mm (2) (+)limited resistance (3) Corresponding means no listing at UL (yellow card). The information might be taken from resin, stock shape or estimation. Individual testing regarding application conditions is mandatory.
Resistance to hot water/ bases		(+)		-	2)	
Resistance to weathering		(+)				
Flammability (UL94)	corresponding to	HB		DIN IEC 60695-11-10;	3)	

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Ensinger Ltd
Wilfried Way
Tonyrefail, Mid Glamorgan CF39 8JQ
Great Britain

Phone (01443) 678400
Fax (01443) 675777
ensingerplastics.com

Date: 2023/07/19

Version: AD