Technical Specification Sheets

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Registered Office Address: 124 City Road, London, England, EC1V 2NX. Registered in England, Company Number: 16267073

Chemical Designation
PC (Polycarbonate)

Colour
black

Density
1.37 g/cm^3

Fillers
10% glass fibres, flame retardant (halogen free)

Main features
- electrically insulating
- tested according to EN 45545
- flame retardant as per FAR 25.853
- flame retardant according to UL94 V-0

Target Industries
- electronics
- Railway Interiors
- automotive industry
- aircraft and aerospace interiors

General material information	*parameter*	*value*	*unit*	*norm*		*comment*
Diameter		1,75 +/- 0,05	mm	-		(1) standard spool body (2) Ø 1,75mm
Spool measurements	outer diameter	Ø 200	mm	-	1)	
Spool measurements	width	55	mm	-		
Spool measurements	holder	Ø 52	mm	-		
Spool Material		Polycarbonate		-		
Filament Load per Spool		750	g	-		
Filament Length per Spool		227	m	-	2)	

Mechanical properties	*parameter*	*value*	*unit*	*norm*		*comment*
Tensile strength	5mm/min, Orientation XY	68,9	MPa	DIN EN ISO 527-2	1)	(1) (*5) , (*6) (2) (*5) , (*6) (3) (*5) , (*6) (4) (*5) , (*6) (5) (*5) , (*6) (6) (*5) , (*6) (7) (*5) , (*6) (8) (*5) , (*6) (9) (*5) , (*6) (10) (*5) , (*6) (11) (*5) , (*6) (12) (*5) , (*6) (13) (*5) , (*6) (14) (*5) , (*6) (15) (*5) , (*6) (16) (*5) , (*6) (17) (*5) , (*6) (18) (*5) , (*6)
Tensile strength	5mm/min, Orientation XZ	77,4	MPa	DIN EN ISO 527-2	2)	
Tensile strength	5mm/min, Orientation ZX	26,0	MPa	DIN EN ISO 527-2	3)	
Modulus of elasticity (tensile test)	5mm/min, Orientation XZ	4402	MPa	DIN EN ISO 527-2	4)	
Modulus of elasticity (tensile test)	5mm/min, Orientation XY	3792	MPa	DIN EN ISO 527-2	5)	
Modulus of elasticity (tensile test)	5mm/min, Orientation ZX	1894	MPa	DIN EN ISO 527-2	6)	
Elongation at break (tensile test)	5mm/min, Orientation XY	4,2	%	DIN EN ISO 527-2	7)	
Elongation at break (tensile test)	5mm/min, Orientation XZ	3,7	%	DIN EN ISO 527-2	8)	
Elongation at break (tensile test)	5mm/min, Orientation ZX	1,9	%	DIN EN ISO 527-2	9)	
Flexural strength	2mm/min, Orientation XY	100,7	MPa	DIN EN ISO 178	10)	
Flexural strength	2mm/min, Orientation XZ	113,5	MPa	DIN EN ISO 178	11)	
Flexural strength	2mm/min, Orientation ZX	69,0	MPa	DIN EN ISO 178	12)	
Modulus of elasticity (flexural test)	2mm/min, Orientation XY	2960	MPa	DIN EN ISO 178	13)	
Modulus of elasticity (flexural test)	2mm/min, Orientation XZ	3610	MPa	DIN EN ISO 178	14)	
Modulus of elasticity (flexural test)	2mm/min, Orientation ZX	2240	MPa	DIN EN ISO 178	15)	
Elongation at break (flexural test)	2mm/min, Orientation XY	5,3	%	DIN EN ISO 178	16)	
Elongation at break (flexural test)	2mm/min, Orientation XZ	5,4	%	DIN EN ISO 178	17)	
Elongation at break (flexural test)	2mm/min, Orientation ZX	4,4	%	DIN EN ISO 178	18)	

Thermal properties	*parameter*	*value*	*unit*	*norm*		*comment*
Glass transition temperature		115	°C	ASTM D 3418	1)	(1) (*2) (2) (*2) (3) (*5) , (*6) (4) (*2) (5) (*2) (6) (*2)
Melting temperature		-		DIN EN ISO 11357	2)	
Deflection temperature	HDT-A	94	°C	ISO-R 75 Method A	3)	
Service temperature	short term	100	°C	-	4)	
Service temperature	long term	80	°C	-	5)	
Thermal expansion (CLTE)		-	10^{-5} K $^{-1}$	DIN EN ISO 11359-1;2	6)	

Other properties	*parameter*	*value*	*unit*	*norm*		*comment*
Moisture absorption		0,05	%	DIN EN ISO 62		(1) (*5) , (*6) (2) (*5) , (*6) (3) (*5) , (*6) (4) (*5) , (*6) (5) (*5) , (*6) (6) (*5) , (*6) (7) (*5) , (*6) (8) (*5) , (*6) (9) (*5) , (*6)
Flammability (UL94)	UL94 - V0 // 125x13mm	1,5 & 5,0	mm	DIN IEC 60695-11-10;	1)	
Flammability	DIN EN 45545-2:2023: R1 - HL1, HL2, HL3	1,5 & 5,0	mm	EN 45545-2:2016	2)	
Flammability	Smoke Density, FAR/CS 25.853 (d) App. F Part V	1,5 & 5,0	mm	FAR 25.853	3)	
Flammability	Heat release (OSU), FAR/CS 25.853 (d) App. F Part IV	1,5 & 5,0	mm	FAR 25.853	4)	
Flammability	Gas Toxicity, AITM 3-0005 (issue 2) // Boeing BSS 7239	1,5 & 5,0	mm	FAR 25.853	5)	
Flammability	15 sec. Horizontal Bunsen Burner test, FAR/CS 25.853 (a) App. F Part I (a)(1)(v)	1,5 & 5,0	mm	FAR 25.853	6)	

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Flammability	12 sec. Vertical Bunsen Burner test, FAR/CS 25.853 (a) App. F Part I (a)(1)(ii)	1,5 & 5,0	mm	FAR 25.853	7)	
Flammability	15 sec. Horizontal Bunsen Burner test, FAR/CS 25.853 (a) App. F Part I (a)(1)(iv)	1,5 & 5,0	mm	FAR 25.853	8)	
Flammability	60 sec. Vertical Bunsen Burner test, FAR/CS 25.853 (a) App. F Part I (a)(1)(i)	1,5 & 5,0	mm	FAR 25.853	9)	
Melt flow index (MFI)	300°C / 1,2kg	7,4	g/10 min	DIN EN ISO 1133		
Processing parameter	***parameter***	***value***	***unit***	***norm***		***comment***
Nozzle temperature		300 - 330	°C	-		(1) recommended
Max. melt temperature		350	°C	-		
Print bed temperature		100 - 130	°C	-		
Build chamber temperature		80 - 110	°C	-	1)	
Nozzle diameter		0,4 - 0,6	mm	-		
Print speed		25 - 40	mm/s	-		
Fan speed		0	%	-		
Predrying	***parameter***	***value***	***unit***	***norm***		***comment***
Drying temperature		100	°C	-	1)	(1) (*4)
Drying time		8	h	-		

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