

Technical Data

ThermoBlast



Produce components and molds which resist environments with temperatures of up to 300 °C with Cubicure's ThermoBlast. This high-performance photopolymer passes vertical flammability tests with a thickness as low as 0.45 mm. Its excellent insulating properties such as a dielectric strength of 30 kV/mm and a CTI of 600 V make it the ideal choice for electronic components. On ThermoBlast, conductor tracks can be placed closer to each other, which allows for smaller parts. Also use it to print components for the aerospace or health industries.

Mechanical properties

Property	Standard	Print orientation	Experimental condition	Result
Tensile strength	ISO 527 (Type 5A)	XYZ	1 mm min ⁻¹	90 MPa
Young's Modulus	ISO 527 (Type 5A)	XYZ	1 mm min ⁻¹	5000 MPa
Elongation at break	ISO 527 (Type 5A)	XYZ	1 mm min ⁻¹	2.4 %
Flexural strength	ISO 178	XZY	2 mm min ⁻¹	145 MPa
Flexural modulus	ISO 178	XZY	2 mm min ⁻¹	4700 MPa
Charpy unnotched	ISO 179-1/1eU	XYZ	-	10 kJ m ⁻²
Izod notched	ASTM D 256	XYZ	-	21 J m ⁻¹
Shore hardness	ISO 868	XYZ	D	90
HDT A	ISO75	XZY	@ 1.8 MPa	270 °C
HDT B	ISO75	XZY	@ 0.46 MPa	>300 °C
HDT C	ISO75	XZY	@ 8.0 MPa	142 °C

Physical data

Density	ISO 1183	XYZ	-	1.35 g cm ⁻³
Thermal expansion (CTE)	ISO 11359-2	YZZ	-100 – 0 °C 0 – 150 °C 150 – 300 °C	42 ppm K ⁻¹ 63 ppm K ⁻¹ 100 ppm K ⁻¹
Thermal conductivity (λ)	ASTM E 1461	YZX	23°C	0.19 W m ⁻¹ K ⁻¹

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Fire resistance

Property	Standard	Print orientation	Experimental condition	Result
Flammability	UL 94	ZYX	6.00 mm	V-0
		YZX	0.75 mm	V-0
		YZX	0.45 mm	V-0
GWFI	DIN EN 60695-2	ZXY	0.45 mm	960 °C
GWIT	DIN EN 60695-2	ZXY	0.45 mm	850 °C

Electrical data

Dielectric constant (ϵ_r)	IEC 60250	YZX	50 Hz	3.15
			1 kHz	3.12
			1 MHz	3.40
Dissipation factor ($\tan\delta$)	IEC 60250	YZX	50 Hz	0.0054
			1 kHz	0.0047
			1 MHz	0.0239
Dielectric strength	IEC 60243-1	YZX	23°C	30 kV mm ⁻¹
Volume resistivity	IEC 62631-3-1	YZX	23°C	3*10 ¹⁵ Ω cm
Surface resistivity	IEC 62631-3-2	YZX	23°C	1*10 ¹⁵ Ω
Comparative Tracking Index (CTI)	IEC 60112	ZXY	23°C	600 V

Additional tests



Thermal vacuum outgassing test (Micro-VCM test)	ECSS-Q-ST-70-02C	XYZ	TML	1.92%
			RML	0.71%
			CVCM	0.00%
			WVR	1.21%

Print orientation according to ASTM/ISO 52921.

The results presented in this technical data sheet were achieved on a Cubicure Caligma 200 printer (405 nm laser) after being processed and postprocessed according to Cubicure protocols. This information is based on our present state of knowledge, is provided in good faith, and is intended to provide general notes on our products and their uses. This information does not represent a warranty and Cubicure excludes any liability and responsibility for the product or any damages or loss of profit derived from the product. The assessment, testing, and selection of a product for a purpose or application as well as the compliance with third party and industrial property rights lie solely within the responsibility of the customer. Cubicure reserves the right to change any information in the technical data sheet as well as underlying protocols, processes, and formulations at any time without further notice.

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