

## ULTEM™ 1010

Fused Deposition Modelling  
(FDM)



### High strength, heat resistant material able to withstand steam autoclaving

ULTEM™ 1010 is the strongest and most durable thermoplastic on the market, designed for superior heat/chemical resistance and the ability to withstand steam autoclaving.

ULTEM™ 1010 is available in a general purpose grade, as well as a certified grade for those customers who want to take advantage of food contact and biocompatibility certifications for specialised applications including food production tools and custom medical devices. This high-performance material is also ideal for aerospace and automotive applications.

#### Why choose ULTEM™ 1010?

- High strength
- High thermal and chemical resistance
- Steam autoclavable
- Biocompatible (ISO 10993: USP Class VI)
- Certified for food contact (NSF-51)

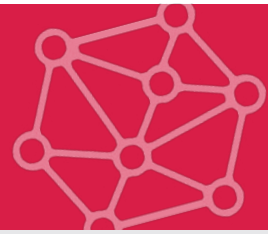
#### Applications

- Aerospace applications
- Composite tooling
- Medical applications
- Food contact applications



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General properties	Value (XY Axis)	Test method
Colour	Black Natural	Visual
Part density	1.27 g/cm <sup>3</sup>	ASTM D792

Thermal properties	Value (XY Axis)	Test method
Heat deflection temperature – annealed (0.45Mpa)	216° C	ASTM D648
Heat deflection temperature – annealed (1.8Mpa)	213° C	ASTM D648

Mechanical properties	Value (XY Axis)	Test method
Tensile strength (ultimate)	81 MPa	ASTM D638
Tensile modulus	2770 MPa	ASTM D638
Elongation at break	3.3%	ASTM D638
Flexural strength	144 MPa	ASTM D790
Flexural modulus	2820 MPa	ASTM D790
Flexural strain at break	No break	ASTM D790
Flexural modulus	2006 MPa	ASTM D790
Impact strength – Izod (notched)	41 J/m	ASTM D256
Impact strength – Izod (un-notched)	326 J/m	ASTM D256

Burn testing	Value (XY Axis)	Test method
Horizontal burn (15 sec)	Passed (1.5 mm thick)	14 CFR/FAR 25.853
Vertical burn (60 sec)	Passed (1.5mm thick)	14 CFR/FAR 25.853
Vertical burn (12 sec)	Passed (1.5mm thick)	14 CFR/FAR 25.853
45° Ignition	Passed (1.5mm thick)	14 CFR/FAR 25.853
Heat release	Passed (1.5mm thick)	14 CFR/FAR 25.853
NBS smoke density (flaming)	Passed (1.5mm thick)	ASTM F814/E662
NBS smoke density (non-flaming)	Passed (1.5mm thick)	ASTM F814/E662

Other	Value (XY Axis)	Test method
Flammability classification	V0 (1.5 mm), V0, 5VA (3mm)	UL94
OSU total heat release (2 min test, 1.5mm thick)	35.7 kW min/m <sup>2</sup>	FAR 25.853

Get a quote for your parts at [rapidfab.ricoh-europe.com](https://rapidfab.ricoh-europe.com)

Have a question? Call our friendly team on

**+44 (0) 800 304 7196**

Specifications are subject to change without notice.

The technical data indicated above is an average value of the test result of a part created under proper management and appropriate conditions.  
The value is for reference and is not guaranteed.