

# Ultra Diamond@Tiamet3D

Ultra Diamond is Tiamet3D's first game changing material, made possible by MCPP Netherlands. It is the first step in realizing our vision for creating a wide range of ULTRA high performance nano composites.

## Material features:

- One of the most rigid material on the market (6300 MPa)
- Completely new nano composite technology for 3D printing
- Nonabrasive and non hygroscopic
- Prints like PLA performs like high end polymers
- Much cheaper vs PA Carbon
- >100°C HDT in non-annealed samples (125°C annealed)
- Fast printing, low print temp (~230°C) and very smooth surface

## Colours:

Ultra Diamond@Tiamet3D is available from stock in Original.

na1 bk1 gy1

## Packaging:

Ultra Diamond@Tiamet3D is available in your own packaging with co-branding from Tiamet3D.



## Filament specs.

Size	Ø tolerance	Roundness
1,75mm	± 0,05mm	≥ 95%
2,85mm	± 0,10mm	≥ 95%

## Material properties

Description	Testmethod	Typical value
Specific gravity (g/cm <sup>3</sup> )	ISO 1183	1,35
MFI 210°C/2,16 kg		10
Printing temp.	DF	230±15°C
Melting temp.		190-220°C
Strain at break	ISO 527	3,2%
Tensile modulus (MPa)	ISO 527	6300
Thermal conductivity		0,4±0,02
Elongation at break (%)	ISO 527	3,2
Tensile strength at Max Load (MPa)	ISO 527	43,5
Impact strength - charpy notched 23 °C (kJ/M <sup>2</sup> )	ISO 179	2
Heat deflection temp. (°C) 0,45 MPa	ISO 75-2:2013 B	107
Annealed heat deflection temp. (°C) 0.45 MPa	ISO 75-2:2013 B	125
Tensile strength post annealing (MPa)		65

\* Results on printed objects: Technical University Delft & VTT Technical Research Centre of Finland

\*\* Post annealing information differs based on annealing techniques

## Additional info:

Ultra Diamond cannot be printed without a heated bed. If you have a heated bed the recommended temperature is ± 50-60°C. Ultra Diamond adheres to any print surface though we always recommend some adhesive or a print sticker. Ultra Diamond can be used on most common desktop FDM or FFF technology 3D printers. Storage: Cool and dry (15-25°C) and away from UV light. This enhances the shelf life significantly.