

# PLACTIVE AN<sup>1</sup>@COPPER3D

PLACTIVE AN1™ is an innovative Nanocomposite developed with a high-quality PLA and a patented, scientifically validated and highly effective Nano-Copper additive. This unique combination of technologies brings the following characteristics to our products:

## Material features:

- Antibacterial action has been scientifically validated eliminating more than 99.99% of fungi, viruses, bacteria and a wide range of microorganisms;
- Clinically tested in prosthesis for amputees with excellent results\*
- Tested by NASA to avoid contamination in long term space flights\*\*
- Non-toxic product and environmentally friendly (biodegradable);
- It has thermoforming characteristics that facilitates post-processing and final adjustments of the 3D printed application.

\*Department of Biomechanics, University of Nebraska, Omaha, NE 68182, USA;jmzuniga@unomaha.edu

\*\*NASA Nebraska Space Grant 2018



## Colours:

PLACTIVE AN1@Copper3D is available from stock in:



## Packaging:

PLACTIVE AN1@Copper3D is only available in the original packaging of PLACTIVE AN1.

## 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/cc	D792	1.24
MFR, g/10min	D1238	6
Relative viscosity	D5225	4.0
Tensile Yield Strength, psi (MPa)	D882	8700 (60)
Tensile Strength at break, psi (MPa)	D882	7700 (53)
Tensile modulus, psi (MPa)	D882	524,000 (3.6)
Tensile elongation, %	D882	6
Heat distortion temperature, °C 66 psi (0.45 MPa)	E2092	55
Flexural strength, psi (MPa)	D790	12,000 (83)
Flexural modulus, psi (MPa)	D790	555,000 (3.8)

## Additional info:

The antibacterial properties of the filament use to 3D print the antibacterial fingers were tested by an independent US laboratory following standard procedures for ISO 22196. The bacterial analysis showed that PLACTIVE™ with 1% antibacterial nanoparticles additive was up to 99,99% effective against *staphylococcus aureus* and *Escherichia coli*.

\*Department of Biomechanics, University of Nebraska, Omaha, NE 68182, USA;jmzuniga@unomaha.edu