



## NANOCICLA DATASHEET

Chemical name of PLA: Polylactic acid with copper nanoparticles.

### Description:

We use a material reinforced with nanoparticles, making it antimicrobial, antibacterial and antiviral.

The PLA NanoCicla filament is easy to print by the user thanks to its reliability and good surface quality. It is made of biodegradable materials. It is suitable for a wide range of applications.

### Main features:

The PLA NanoCicla filament offers good tensile strength and surface finish. It can work at high printing speeds and allows the creation of high resolution parts.

### Recommended for use in:

Household tools (not heavy duty), toy making, educational projects, exhibits, prototyping, architectural models, mechanical parts, industrial parts and also for lost wax casting methods for the creation of metal parts.



## Filament Specifications:

Color: Various

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Diameter: 1.75 / 0.04mm

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Quantity per roll: 1 Kg (350 m approx.)

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Extrusion temperature: 190°C - 220°C (Reference values)

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Bed temperature: 0°C - 60°C (Reference values)

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Print speed: 60mm / sec

**Recommendations: Before starting to print, make a temperature tower and confirm the specifications.**

Mechanical Properties: 3D Printing

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Young's modulus in tensile: 2346.5MPa

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Tensile strength: 49.5MPa

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Flexural strength: 103MPa

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Young's modulus in flexion: 3150GPa

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Impact: 5.1KJ / m2

Recommendations: Avoid prolonged use outdoors or applications in which the printed part is exposed to temperatures of 50 ° C.

## ESSAY REPORT

### LABORATORY: MICROLABS

CLIENTE	Cicla3D
ATENCIÓN DE	Mauricio Mellado
N° ACTA DE MUESTREO	2257
DIRECCIÓN DE MUESTREO	No Aplica – Entrega Cliente
FECHA Y HORA DE MUESTREO	No Aplica – Entrega Cliente
MUESTREADO POR	No Aplica – Entrega Cliente
FECHA DE RECEPCIÓN	23-06-2020 12:25
FECHA Y HORA INICIO ANÁLISIS	24-06-2020 09:00
FECHA EMISIÓN -INFORME	30-06-2020

#### EVALUACIÓN DE EFICACIA ANTIBACTERIANA

Muestra	NANOCICLA PLA Antimicrobial				
	Concentración Suspensión bacteriana	Concentración 8 horas		Concentración 24 horas	
		Recuento Aerobios Mesófilos	% Eficacia	Recuento Aerobios Mesófilos	% Eficacia
<i>Escherichia coli</i> ATCC 8739	1,1 x 10 <sup>6</sup> ufc/ mL	3,1 x 10 <sup>2</sup> ufc/ mL	99,97181%	1,2 x 10 <sup>2</sup> ufc/ mL	99,98909%

Observations: % Efficacy =  $[(Ni - Np) / Ni] \times 100$  = percentage reduction of microorganisms

Ni = Initial concentration count

Np = Count obtained in product

The reported test results are covered by Microlab SpA Management System accredited under NCh-ISO / Iec 17025 Certificates LE 1392 and LE 1469.