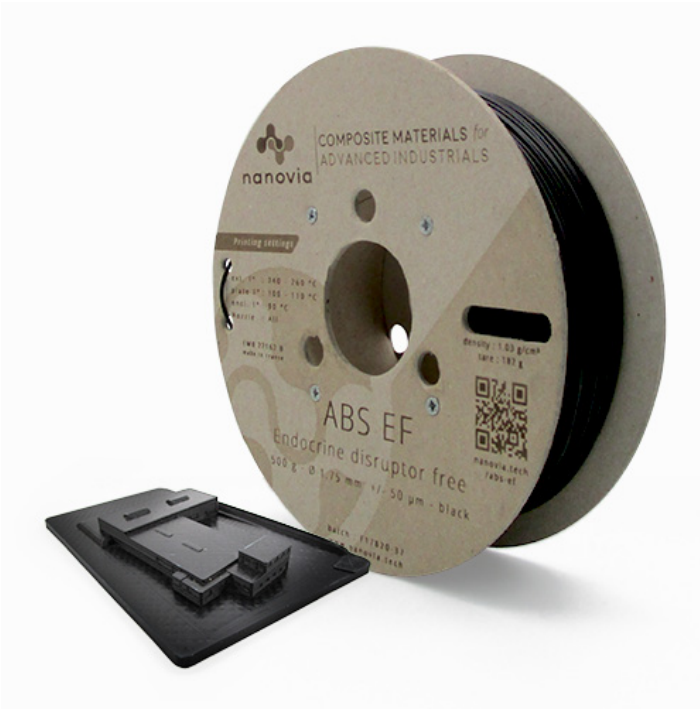

COMPOSITE MATERIALS *for* ADVANCED INDUSTRIALS

Nanovia ABS EF :

Endocrine disruptor free

Nanovia ABS EF distinguishes itself due to its higher shock and thermal resistance, as well as being able to smoothed using acetone. Nanovia ABS EF is certified Estrogenic endocrine disruptor free.

Advantages

- Certified endocrine and endrogenic disruptor free
- Adapted for human interaction, such as toys
- Good shock resistance
- Can be acetone smoothed
- Certified without heavy metals RoHS

Application recommendations

Storage

- Store in airtight container with desiccant, out of direct sunlight.
- Dehydrate for 4h at 60°C prior to printing after prolonged exposure to humidity.

Printing

With it's printing settings close to standard, the Nanovia ABS EF filament can be used on most commercially available 3D printers.

- Extrusion temperature : between 240 and 260 °C
- Heated bed temperature : between 100 and 110 °C
- Enclosure temperature: 90 °C

Post treatment

- For an outdoor usage, we recommend that you paint your print or submit them to an anti UV treatment, such as our Nanovia smoothing solution. ABS is sensitive to UV radiation.

Properties

3D Printing

Extrusion temperature	240 – 260	°C	
Plate temperature	100 – 110	°C	
Enclosure temperature	90	°C	
Nozzle (minimum)	0.5	mm	
Printing speed	20 – 60	mm/s	
Diameter	1.75 & 2.85	mm	+/- 50 µm
Colours	Cream (native), black		

Mechanical properties

Physical

Density	1.03	g/cm^3	ISO 1183

Tensile

Test performed at 1mm/min on 3D printed test specimins at 0°, along with the tension stress.

Young's modulus	1800	MPa	ISO 527-2/1A
Ultimate strength	33	MPa	ISO 527-2/1A
Elongation ultimate strength	2.3	%	ISO 527-2/1A

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Health and safety

Printing

- We recommend printing Nanovia ABS EF in a room equipped with air extraction or by using appropriate breathing equipment. Whilst printing ABS produces a VOC derivative of styrene.

Post treatment

- Standard PPE recommended (dust mask, gloves)

Please refer to the security chart for more information.

Endocrine disruptor test:

1 Method OEDT – SERPBIO Laboratory. Sample : NANOVIA 3D filament ABS EF.

Study: Measuring the activity of the human estrogenic receptors expressed in S. cerevisiae (SW303.1B).

Every measurement is reproduced 3 times independently with the different contents of the tested sample.

Results: The obtained data shows that the tested product does not influence the measured activity.

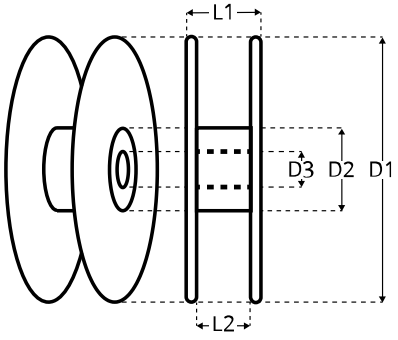
Note on the ratio of circulating plasmic œstradiol: With menopaused women / with men: * [4×10-11M – 2×10-10M] with pre menopaused women (excluding ovulation): [1×10-10M – 5×10-10M] / with women (ovulation): [2×10 -9m] * a value is considered critical when it exceeds [2×10-11M].

CONCLUSION: The tested material can be considered absent of endocrine disruptors.

Certifications

- RoHS certification Nanovia ABS EF :

Packaging



Vacuum packed spools, with desicant, packed in individual boxes with engraved serial number.

Other formats available on demand.

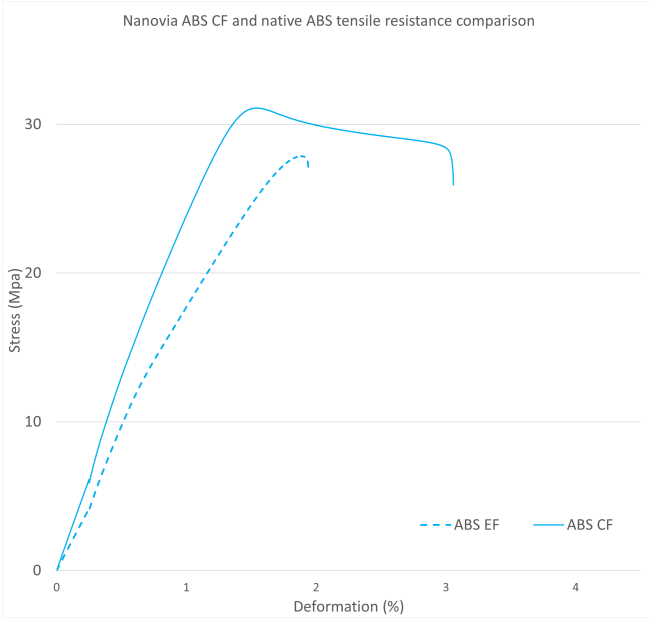
Spool	L1	L2	D1	D2	D3	Weight
500g	53	46	200	90	52	182 g
2kg	92	89	300	175	52	668 g

Test performed at 1mm/min on 3D printed test specimins successively at 45° and -45° per layer.

Young's modulus	1820	MPa	ISO 527-2/1A
Ultimate strength	29	MPa	ISO 527-2/1A
Elongation ultimate strength	2.3	%	ISO 527-2/1A

Test performed at 1mm/min on 3D printed test specimins at 90°, oposite to the tension stress.

Young's modulus	1820	MPa	ISO 527-2/1A
Ultimate strength	26	MPa	ISO 527-2/1A
Elongation ultimate strength	2.1	%	ISO 527-2/1A



Impact

Charpy (notched)	18	kJ/m^2

Thermal properties

Tg	110	°C	
VICAT	102	°C	ISO 306/B50
Flammability	HB	1.5 mm	UL 94

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