

# TECHNICAL DATA SHEET

- Propenonitrile butadiene styrene filament with high manufacturing tolerances
- It dissipates electrostatic charges
- It doesn't require drying (hygroscopicity close to none)
- Working temperatures of printed items up to 95°C
- Low level of volatiles during printing
- Great cohesiveness of print layers allows for very fast print speeds (250 mm/s)
- Shrinkage not exceeding 0.4%



## Recommended print parameters

Parameter	Value
Hotend temperature	245°C – 260°C
Bed temperature	90°C – 110°C
Print cooling	none

## Material properties

Mechanical properties	Parameter	Value		Standard
Tensile modulus of elasticity [E <sub>t</sub> ]	5.0 mm/min	1890 MPa	274 121 psi	ASTM D 638
Secant modulus [E <sub>sec</sub> ]	5.0 mm/min	1820 MPa	263 969 psi	ASTM D 638
Stress at elongation ×1% [σ <sub>x1</sub> ]	5.0 mm/min	26.6 MPa	3 858 psi	ASTM D 638
Tensile strength at yield [σ <sub>y</sub> ]	5.0 mm/min	43.2 MPa	6 266 psi	ASTM D 638
Tensile elongation at yield [ε <sub>y</sub> ]	5.0 mm/min	2.80%	2.80%	ASTM D 638
Ultimate strength [σ <sub>M</sub> ]	5.0 mm/min	43.2 MPa	6 266 psi	ASTM D 638
Tensile elongation at ultimate strength [ε <sub>M</sub> ]	5.0 mm/min	2.80%	2.80%	ASTM D 638
Tensile stress at break [σ <sub>B</sub> ]	5.0 mm/min	40.1 MPa	5 816 psi	ASTM D 638
Tensile elongation at break [ε <sub>B</sub> ]	5.0 mm/min	3.30%	3.30%	ASTM D 638
Flexural strength [σ <sub>fM</sub> ]	2.8 mm/min	63.2 MPa	9 166 psi	ISO 178
Flexural modulus of elasticity [E <sub>f</sub> ]	2.8 mm/min	1720 MPa	249 465 psi	ISO 178
Rockwell hardness	R	R 112	R 112	ASTM D 785
Izod notched impact strength	3.2 mm; 23°C	320 J/m	5.98 ft-lb/in	ASTM D 256
Izod notched impact strength	(80×10×4); 23°C	22 kJ/m <sup>2</sup>	10.5 ft-lb/in <sup>2</sup>	ISO 180
Izod notched impact strength	(80×10×4); -30°C	8 kJ/m <sup>2</sup>	3.81 ft-lb/in <sup>2</sup>	ISO 180
Thermal properties	Parameter	Value		Standard
Heat deflection temperature	0.45 MPa	95.1 °C	203°F	ASTM D 648
Vicat softening temperature	B/50	99 °C	210°F	ISO 306
Physical properties	Parameter	Value		Standard
Density		1.04 g/cm <sup>3</sup>	64.9 lb/ft <sup>3</sup>	ISO 1183
Melt flow index	220°C; 10.0 kg	18 g/10 min	0.635 oz/10 min	ASTM D 1238
Other properties	Parameter	Value		Standard
Surface resistivity [ρ <sub>s</sub> ]		10 <sup>7</sup> Ω - 10 <sup>8</sup> Ω		ASTM D 257

## Recommended print parameters

Parameter	Value
Hotend temperature	245°C – 260°C
Bed temperature	90°C – 110°C
Print cooling	none
Enclosure temperature	45°C – 55°C

## Filament manufacturing tolerances

	ø 1.75 mm	ø 2.85 mm
Diameter tolerance	± 0.03 mm	± 0.05 mm
Ovality tolerance	± 0.01 mm	± 0.02 mm

## Colors manufactured

Color		ø 1.75 mm	ø 2.85 mm
black		●	●
custom		○	○

● standard ○ on request

Standard spool – net weight of 1 kg.

Other spools (net weight of 2 kg, 4 kg and more) available on request.