

# TECHNICAL DATA SHEET

- Propenonitrile butadiene styrene filament with high manufacturing tolerances
- High resistance to UV radiation and weather conditions
- 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 [ $E_t$ ]	5.0 mm/min	1900 MPa	275 572 psi	ASTM D 638
Secant modulus [ $E_{sec}$ ]	5.0 mm/min	1820 MPa	263 969 psi	ASTM D 638
Stress at elongation $\times 1\%$ [ $\sigma_{x1}$ ]	5.0 mm/min	26.0 MPa	3 771 psi	ASTM D 638
Tensile strength at yield [ $\sigma_y$ ]	5.0 mm/min	42.4 MPa	6 150 psi	ASTM D 638
Tensile elongation at yield [ $\epsilon_y$ ]	5.0 mm/min	2.70%	2.70%	ASTM D 638
Ultimate strength [ $\sigma_M$ ]	5.0 mm/min	42.4 MPa	6 150 psi	ASTM D 638
Tensile elongation at ultimate strength [ $\epsilon_M$ ]	5.0 mm/min	2.70%	2.70%	ASTM D 638
Tensile stress at break [ $\sigma_B$ ]	5.0 mm/min	36.4 MPa	5 279 psi	ASTM D 638
Tensile elongation at break [ $\epsilon_B$ ]	5.0 mm/min	4.40%	4.40%	ASTM D 638
Flexural strength [ $\sigma_{fM}$ ]	2.0 mm/min	63 MPa	9 137 psi	ISO 178
Flexural modulus of elasticity [ $E_f$ ]	2.0 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 $\times$ 10 $\times$ 4); 23°C	22 kJ/m <sup>2</sup>	10.5 ft-lb/in <sup>2</sup>	ISO 180
Izod notched impact strength	(80 $\times$ 10 $\times$ 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	230°C; 3.8 kg	5.6 g/10 min	0.198 oz/10 min	ASTM D 1238
Melt flow index	220°C; 10.0 kg	18 g/10 min	0.635 oz/10 min	ASTM D 1238

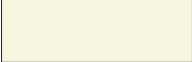


**Recommended print parameters**

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
ivory 	●	●
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.