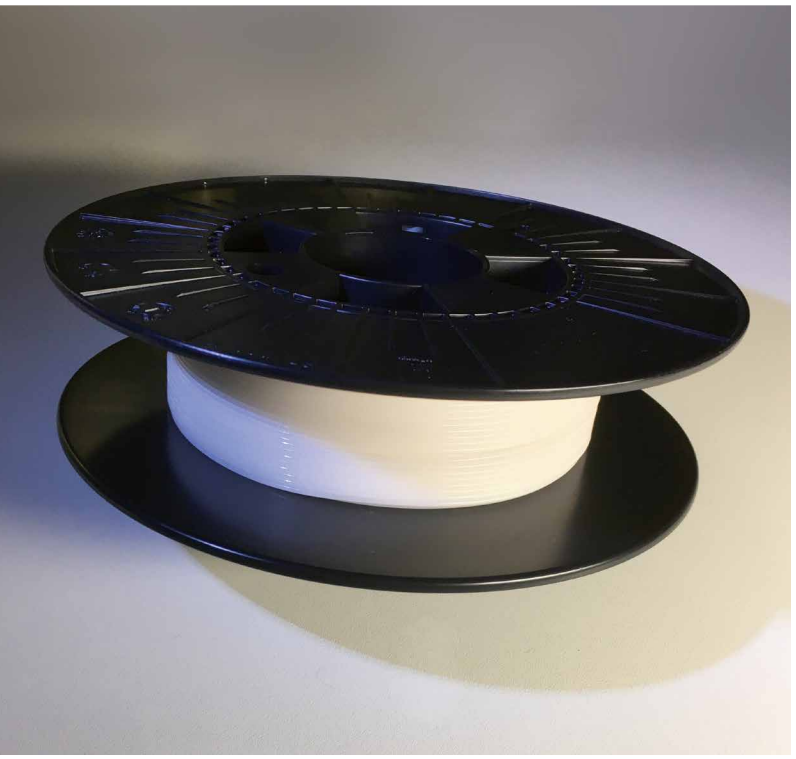
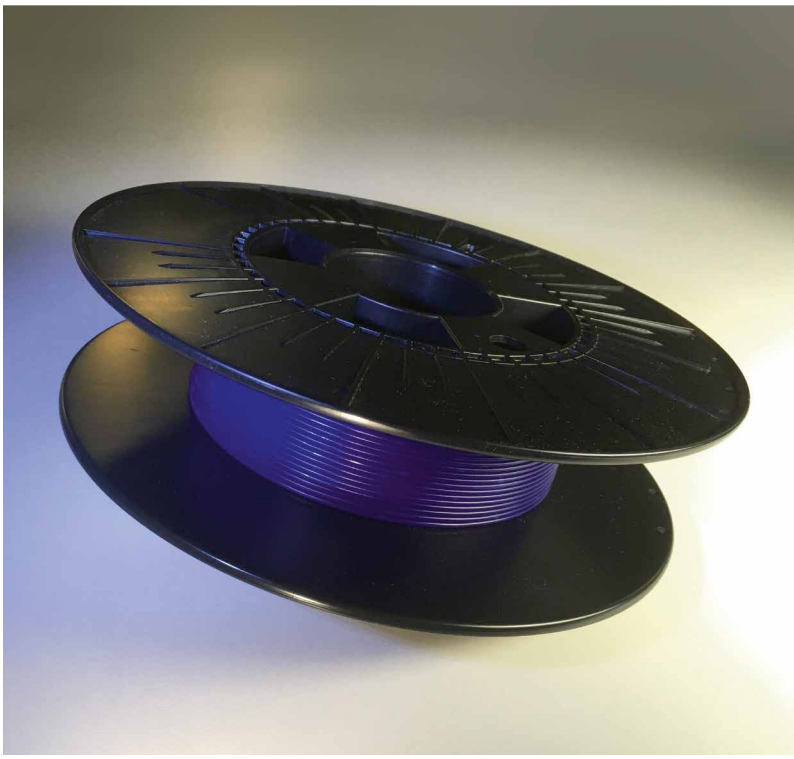
Medical Grade Absorbable Monofilaments for 3D Printing





Poly-ε-caprolactone (PCL) and poly-p-dioxanone (PDO) monofilaments for 3D printing

Available Monofilaments for 3D Printing:

- Poly-ε-caprolactone (PCL)
- Poly-p-dioxanone (PDO)

Monofilaments for 3D printing are now also available in absorbable medical grade polymers. The monofilaments made of PCL and PDO are offered in a diameter of 1.75 mm with high dimensional accuracy for 3D printing (FDM process).

Our product range includes a mid-term absorbable PDO monofilament and a long-term absorbable PCL monofilament with best processability. PCL monofilaments are available undyed (white) and PDO monofilaments are available dyed (violet).

Medical Grade Absorbable Monofilaments for 3D Printing

Description	Medical Grade Absorbable Monofilaments with a diameter of 1.75 mm are produced especially for 3D printing (FDM process). They are particularly recommended for the manufacture of long-term (PCL) and mid-term (PDO) implantable devices.			
Identification			PCL	PDO
	Polymer		Poly-ε-caprolactone	Poly-p-dioxanon
	CAS-No.		24980-41-4	29223-92-5
	Colour		undyed (white)	dyed (D&C Violet No. 2)
Specification	Test	Method	Specification	Specification
	Diameter	Laser	1.750 ± 0.050 mm	1.750 ± 0.050 mm
	Inherent viscosity	Viscosimetry c = 0.8 g/dl, HFIP, 30 °C	> 1.400 dl/g	> 1.400 dl/g
	Monomer content	NMR	< 2.0 %	< 3.0 %
	Dyestuff content	UV/VIS spectroscopy	–	0.050 ≤ x ≤ 0.100 % w/w
Manufacturing	The monofilaments are manufactured in ISO Class 8 clean rooms under ISO 13485.			
Packaging	ITVP monofilaments for 3D printing will be supplied on SD 200 K spools. The PCL monofilaments are packaged in aluminium bags under inert gas to prevent degradation. PDO monofilaments will be dried before packaging in aluminium bags. Each delivery is accompanied by a certificate of analysis.			
Storage and Handling	ITVP recommends to store the monofilaments in the original packaging at low temperatures (< -18 °C). Allow them to warm up to room temperature before opening the packaging. After opening the original packaging, please store the monofilaments under inert atmosphere at low temperatures.			

ITV Denkendorf Produktservice GmbH (ITVP) is a subsidiary of the DITF (German Institutes of Textile and Fiber Research Denkendorf), Europe's largest textile research center. ITVP is certified according EN ISO 13485 for the development and production of polymers, pre-products and devices for medical applications, but is not actively marketing medical devices for the final consumer. The main focus lies on textile-based implants like e.g. surgical sutures and ligaments for wound closure, PP meshes for hernia repair and absorbable meshes for soft-tissue reinforcement and breast reconstruction, vascular prostheses for blood vessel replacement and stents for use in the trachea and oesophagus.

ITV Denkendorf Produktservice GmbH

ITVP CEO: Prof. Dr.-Ing. Götz T. Gresser
T +49 (0)711 93 40-216
goetz.gresser@itvp-denkendorf.de

Contact: Dr. rer. nat. Sven Oberhoffner
T +49 (0)711 93 40-163
sven.oberhoffner@itvp-denkendorf.de

Koerschtalstraße 26 | D-73770 Denkendorf
www.itvp-denkendorf.de

DS06/04-21