

# Technical Data Sheet

# Ultrafuse BVOH

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Version No.: 1.3

## General information

### Components

Butenediol vinyl alcohol copolymer based filament for Fused Filament Fabrication.

### Product Description

Printing complex designs may only be possible with temporary support structures. Ultrafuse BVOH water-soluble support filament has been designed to easily dissolve in water. The solubility is increasing with higher water temperature. It offers great compatibility to a variety of materials: PLA, PRO1, ABS, ABS Fusion+, PA and PAHT CF15. Store this monofilament in a sealed bag or container to prevent moisture uptake.

### Delivery form and warehousing

Ultrafuse BVOH filament should be stored at 15 - 25°C in its originally sealed package in a clean and dry environment. If the recommended storage conditions are observed the products will have a minimum shelf life of 12 months.

### Product safety

Recommended: Process materials in a well ventilated room, or use professional extraction systems. For further and more detailed information please consult the corresponding material safety data sheets.

### Notice

The data contained in this publication are based on our current knowledge and experience. In view of the many factors that may affect processing and application of our product, these data do not relieve processors from carrying out their own investigations and tests; neither do these data imply any guarantee of certain properties, nor the suitability of the product for a specific purpose. Any descriptions, drawings, photographs, data, proportions, weights etc. given herein may change without prior information and do not constitute the agreed contractual quality of the product. It is the responsibility of the recipient of our products to ensure that any proprietary rights and existing laws and legislation are observed.

## Recommended 3D-Print processing parameters

Nozzle Temperature	190 – 210 °C / 374 – 410 °F
Build Chamber Temperature	-
Bed Temperature	60 – 100 °C / 140 – 212 °F
Bed Material	Glass
Nozzle Diameter	≥ 0.4 mm
Print Speed	30 – 60 mm/s

## Drying Recommendations

Drying recommendations to ensure printability	60 °C in a hot air dryer or vacuum oven for 4 to 16 hours
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Please note: To ensure constant material properties the material should always be kept dry.

## General Properties

Standard

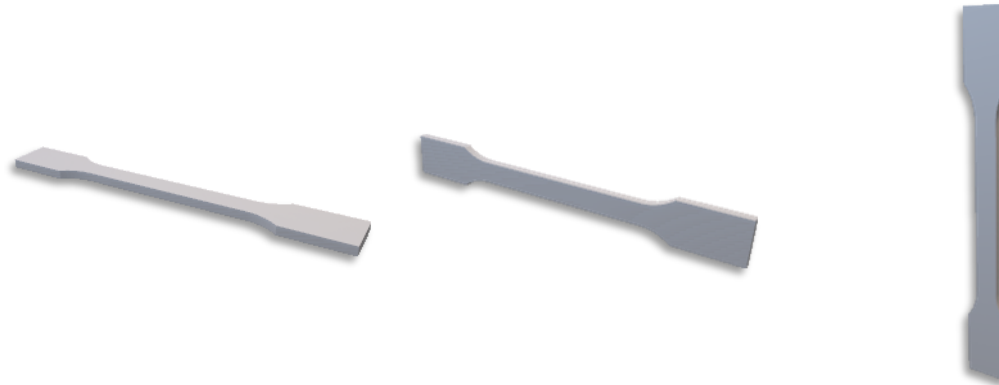
Printed Part Density	1138 kg/m <sup>3</sup> / 71.0 lb/ft <sup>3</sup>	ISO 1183-1
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## Thermal Properties

Standard

Glass Transition Temperature	69 °C / 156 °F	ISO 11357-2
Crystallization Temperature	122 °C / 252 °F	ISO 11357-3
Melting Temperature	175 °C / 347 °F	ISO 11357-3
Melt Volume Flow Rate	11.4 cm <sup>3</sup> /10 min / 0.7 in <sup>3</sup> /10 min (210 °C, 2.16 kg)	ISO 1133

## Mechanical Properties



Print direction	Standard	XY Flat	XZ On its edge	ZX Upright
Tensile strength	ISO 527	33.7 MPa / 4.9 ksi	-	8.7 MPa / 1.3 ksi
Elongation at Break	ISO 527	14.8 %	-	0.6 %
Young's Modulus	ISO 527	2339 MPa / 339 ksi	-	1426 MPa / 207 ksi
Flexural Strength	ISO 178	53.8 MPa / 7.8 ksi	50.3 MPa / 7.3 ksi	11.4 MPa / 1.7 ksi
Flexural Modulus	ISO 178	2236 MPa / 324 ksi	1807 MPa / 262 ksi	1081 MPa / 157 ksi
Flexural Strain at Break	ISO 178	4.8 %	4.4 %	1.0 %