



3kg Ultrafuse 316LX filament spool

## Product description

Metal-polymer composite filament to produce metal components in an **austenitic stainless steel** type 316L using standard FFF printer systems and subsequently an industry standard debinding and sintering process. The filament has a non-slip surface allowing its application in any bowden or direct drive extruder. Its high flexibility allows it to be funneled through complex idler pulleys as well as many guide roller filament transportation systems in any printer.

## Standards

DIN 1.4404, X 2 CrNiMo 17 13 2  
AISI 316L; UNS S31603

## Preliminary filament specifications

Properties	Unit	Typical values	
		Ø 1,75mm	Ø 2,85mm
Metal load	wt%	>80	>80
Filament Diameter	µm	+/-50	+/-50
Roundness	µm	+/-50	+/-50
Density	g/cm <sup>3</sup>	5	4,8
Length per spool	m (approx.)	250	100
Weight per spool	kg (approx.)	3	3

## Recommended 3D-Print processing parameters

Properties	Unit	Typical values
Extruder temp	°C (°F)	235 (455)
Build platform temp	°C (°F)	90 (194)
Nozzle diameter	mm	0,4
Print speed	mm/sec	30
Layer height	mm	0,15-0,2

**Recommended scaling of printed part**

x/y-direction: approx. +19% of required final dimension  
z-direction: approx. +21% of required final dimension  
Please consider, that scaling can vary depending on part geometry.

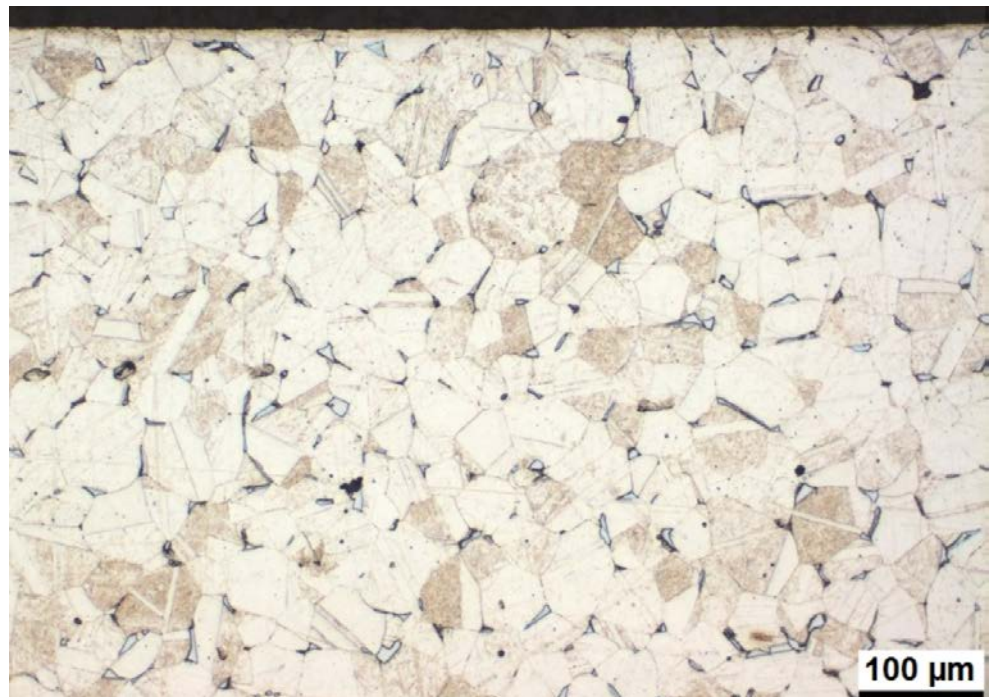
**Debinding and sinter processing**

Catalytic debinding according to the BASF system. Sintering in pure hydrogen or vacuum.

**Preliminary characteristic properties of sintered parts**

Properties	Standard	Unit	Typical values
Density	DIN EN ISO 3369	g/cm <sup>3</sup>	7,83
Yield strength R <sub>p0,2</sub>	BASF	MPa	174
Tensile strength R <sub>m</sub>	BASF	MPa	550
Young's modulus	BASF	GPa	174
Vickers hardness	DIN EN ISO 6507	HV10	120

**Typical microstructure**



*Catamold 316LX, sintered in H<sub>2</sub> at 1360°C*

**Applications**

Non-magnetizable parts with high corrosion resistance and toughness;  
Watches, decorative parts, medical equipment, parts for food and chemical industry;  
Light weight hollow parts and infill parts;  
Parts for tooling and mold inlays with near-surface cooling;  
Various finishing and surface treatments possible on both green and sintered parts.

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## Occupational safety

The safety data given in this publication is for information purposes only and does not constitute a legally binding Material Safety Data Sheet (MSDS). The relevant MSDS can be obtained upon request from your supplier or you may contact BASF directly using the contact data provided below.

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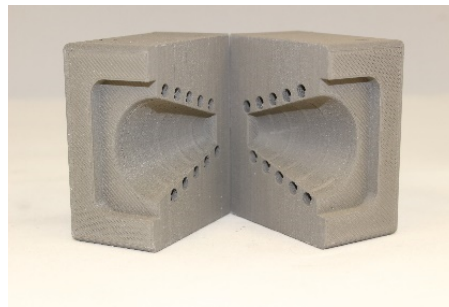
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## Note

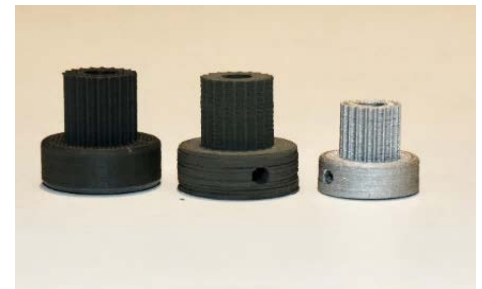
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*Milled surface on screw and nut.*



*Near-surface cooling on mold form.*



*Green, brown and sintered part.*