

Data Sheet

18.03.2022

Product **Fil-316L-F**

Batch No. Fil-316L-F-200222-09

Product description Filament for 3D Printing
Type alloying powder

Material 316L

USA 316L

Germany 1.4404

Sizing	standard(S)	fine(F)	extra fine(XF)
		x	

Composition of starting powder amounts in weight %

Fe	Cr	Ni	Mo	Mn	Si	P	S	C	N	rest		
bal.	16,3	10,5	2,2	1,38	0,79	0,01	0,004	0,018				

Composition DIN 17440 amounts in weight %

DIN 17440	Fe	Cr	Ni	Mo	Mn	Si	P	S	C	N	rest		
min	bal.	16,00	10,00	2,00	0,00	0,00	0,00	0,00	0,00				
max		18,00	14,00	3,00	2,00	1,00	0,04	0,03	0,03				

Debindig

solvent acetone

debinding time depending on wall thickness of regarding part, default around 12h at 42 - 45°C

weight loss

%	4,6500	min	5,3475	max

Sintering

temperature 1340 - 1380°C

atmosphere Hydrogen

schedule thermal debinding within the sintering between 280°C - 650°C

the applicable time and temperature schedule depends on the mass of the part; furnace and furnace loading and are liable to the customer responsibility

density (sintered) g/ccm ~7,9

Properties

general	UTS	Yield strength	Elongation	Hardness
	[MPa]	[MPa]	[%] at 20°C	[HB/HRC]
as sintered	510	220	45	75
heat treated				

Heat treatment

Oversize

98,0%	1,1786
96,0%	1,1705
99,0%	1,1825

Nozle size ≥0,4 mm (recomended)

Print temperature 120 - 150°C (recomended)

Printing speed 30 - 80mm/s (recomended)

Comments

a printer with direct drive is recommended.

**please note that the filament has a high content of metal powder which leads to brittleness.
the ambient temperature for processing should be at least 22 - 25°C
you may preheat the filament to around 35-40°C for spooling.
keep in a dry place.**