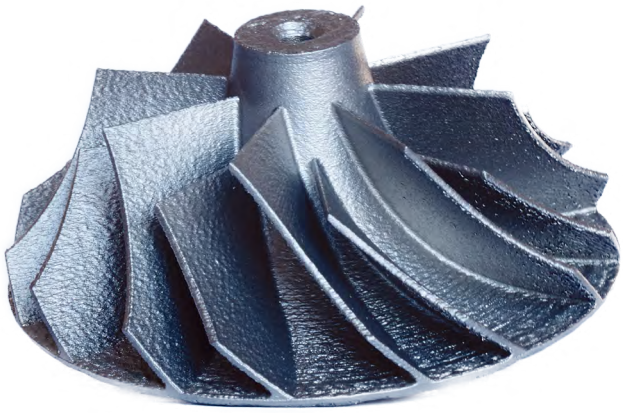
DIRECT METAL LASER SINTERING

STAINLESS STEEL 316L



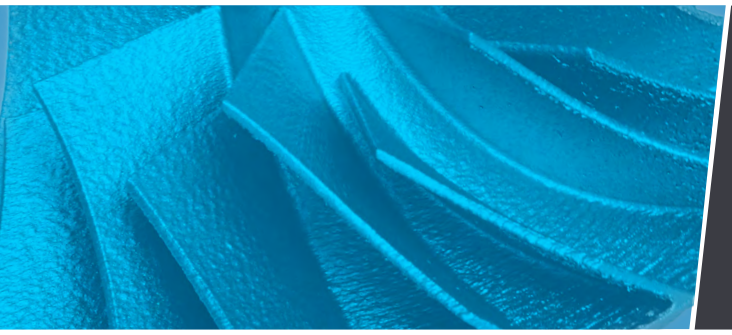
PRODUCT SPECIFICATIONS

PRODUCT DESCRIPTION:

The parts built from StainlessSteel 316L have chemical composition corresponding to ASTM F138 “Standard Specification for Wrought 18Cr-14Ni-2.5Mo Stainless Steel Bar and Wire for Surgical Implants (UNS S31673)”. This kind of stainless steel is characterized having a good corrosion resistance and evidence that there are no leachable substances in cytotoxic concentrations.

APPLICATIONS:

316L is an excellent choice for Applications where a non-corroding, chemical resistant material is needed.



KEY PRODUCT BENEFITS

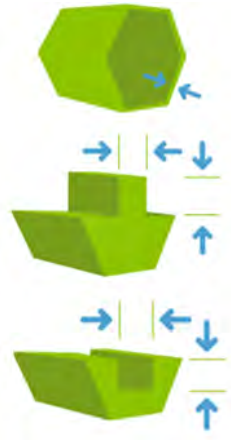
- Corrosion Resistance
- Chemical Resistance
- High Elongation of Break

CHEMICAL COMPOSITION:

According ASTM F138

Element	Min	Max
Fe	Balance	
Cr	17.00	19.00
Ni	13.00	15.00
Mo	2.25	3.00
C		0.030
Mn		2.00
Cu		0.50
P		0.025
S		0.010
Si		0.75
N		0.10

GEOMETRICAL LIMITS:



Min Wall thickness 1.00 mm - Min. Feature Size 1,00 mm

Min. embossed details 0.5mm high and wide and 0.8mm for readable text and clear images

Min. engraved details 0.5mm deep and 0.6mm wide; 1.0mm wide for readable text and clear images

PROPERTIES:

Heat Treatment	Tensile Strength MPa	Yield Strength 0,2% MPa	Elongation %	Hardness	Density
/	570 MPa +/- 30 MPa	470 MPa +/- 30 MPa	40 +/-5 %	85 +/- 5 HRB	~ 99,95%
Heat Treatment	Tensile Strength MPa	Yield Strength 0,2% MPa	Elongation %	Hardness	Density
Heat treated	570 MPa +/- 30 MPa	380 MPa +/-30 MPa	35 +/-5%	85 +/- 5 HRB	~ 99,95%

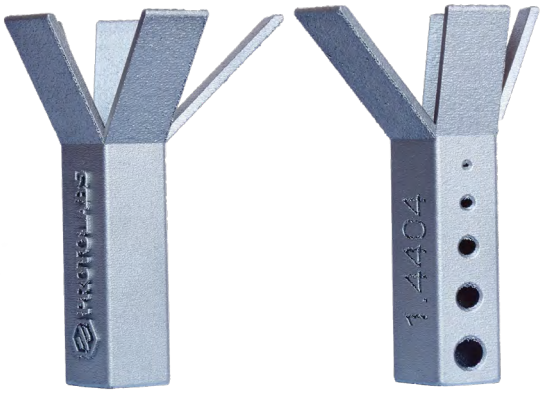
RESOLUTION:

	Layer Thickness	Build Envelope	Min. Feature Size
Fine Resolution	0,02 mm	Ø100 x 80 mm	0,5 mm
High Resolution	0,05 mm	245x245x300 mm	1,00mm

SURFACE:

	0 °	45 ° bottom	45 ° top	90 °
Fine Resolution	Ra 6,8 µm Rz 35,8 µm	Ra 8,37 µm Rz 39,8 µm	Ra 6,81 µm Rz 35,8 µm	Ra 2,34 µm Rz 13,6 µm
High Resolution	Ra 6,6 µm Rz 34,7 µm	Ra 11,6 µm Rz 59,3 µm	Ra 6,6 µm Rz 34,7 µm	Ra 3,6 µm Rz 19,5 µm

Fine Resolution 20 µm



High Resolution 50 µm

STANDARD TOLERANCES:

Typically, for well-designed parts, with a designated build direction, tolerances of +/- 0.1 mm to +/- 0.2 mm + 0.005 mm/mm are expected and achieved.
Certain geometries may cause distortions due to internal stress which may lead to higher deviations.