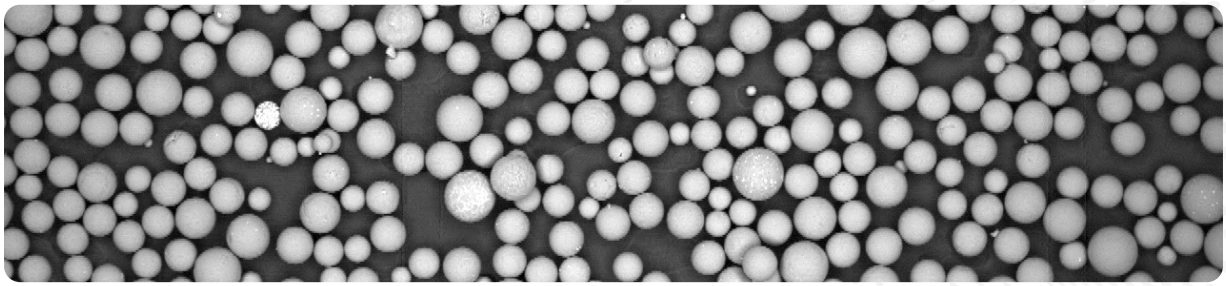

Steel grade AISI 316L

AISI 316L stainless steel alloy is the most common material for 3D printing used for producing various products with complex geometry, with internal cavities and conforming cooling channels. It is applied to a wide range of tasks in various industries, corrosion-resistant, shows rather high strength and endurance.

Chemical composition:

Cr 16-18%	O ≤ 0,1%
Ni 10-14%	C ≤ 0.03%
Mo 2-3%	P ≤ 0,045%
Mn ≤ 2%	S ≤ 0,03%
Si ≤ 1%	N ≤ 0.1%
Cu ≤ 0,75%	Fe balance

Industries application:

- aerospace industry;
- aircraft building industry;
- automotive industry;
- power industry.

Physical and mechanical properties*:

	Orientation XY	Orientation Z
Tensile strength	590-690 MPa	485-595 MPa
Yield Strength	470-590 MPa	380-560 MPa
Young's Modulus	159-175 GPa	117-151 GPa
Elongation	25-55%	30-70%
Hardness	210-214 HV0.5	114-226 HV0.5
Density	8,0 g/см^3	

* The physical and mechanical properties of the products produced by selective laser melting technology largely depend on subsequent processing conditions. The properties of the parts are for as-built condition and can be used only for reference.

Main manufacturing applications:

- engine, machine and machinery parts;
- aircraft and spacecraft parts;
- components for motor vehicles and automobile sport;
- instruments for control, measurement and automation;
- molds for pressure casting of plastics;
- elements of decorative design.