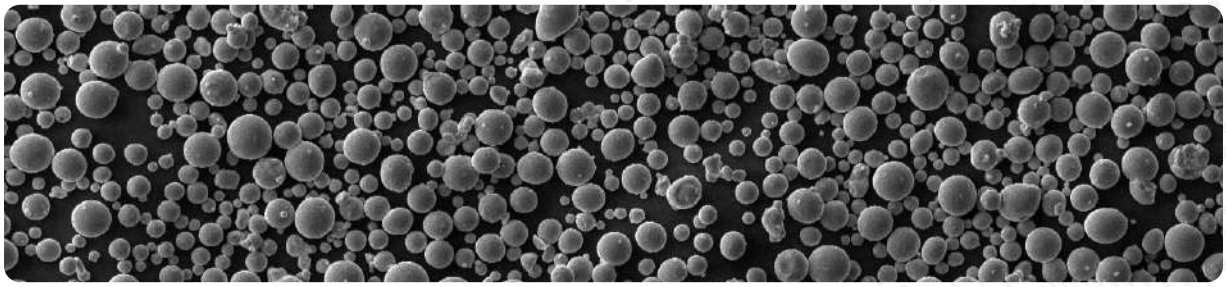
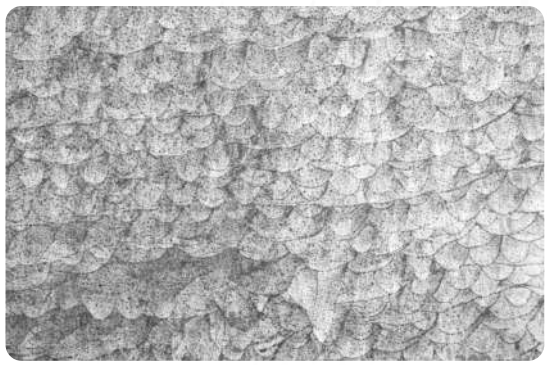


Titanium alloy Ti6Al4V

High-strength biocompatible structural material, characterized by homogeneous dense structure, particularly resistant to corrosion, and also, in combination with good mechanical properties, has low specific weight — the most common material for creation of various medical products, as well as products for aerospace, aircraft, machine-building, instrumentation, jewelry and design. If necessary, the material can be heat-treated to enhance its mechanical properties.

Chemical composition:

Al 5,50-6,50%	N ≤ 0,03%
V 3,50-4,50%	H ≤ 0,0125%
Fe ≤ 0.25%	Yt ≤ 0,005%
O ≤ 0,13%	Ti balance
C ≤ 0,08%	



Industries application:

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

Physical and mechanical properties*:

	Orientation XY	Orientation Z
Tensile strength	1130-1250 MPa	1100-1250 MPa
Yield Strength	1050-1150 MPa	1000-1125 MPa
Young's Modulus	105-115 GPa	110-115 GPa
Elongation	5-10%	5-10%
Hardness	385-405 HV0.5	395-405 HV0.5
Density	4,42 g/см^3	

* The physical and mechanical properties of 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:

- orthopedic and dental implants;
- surgical instruments and elements for fixation of broken bones;
- aircraft and spacecraft parts;
- parts of gas turbine engines;
- components for motor vehicles and automobile sport;