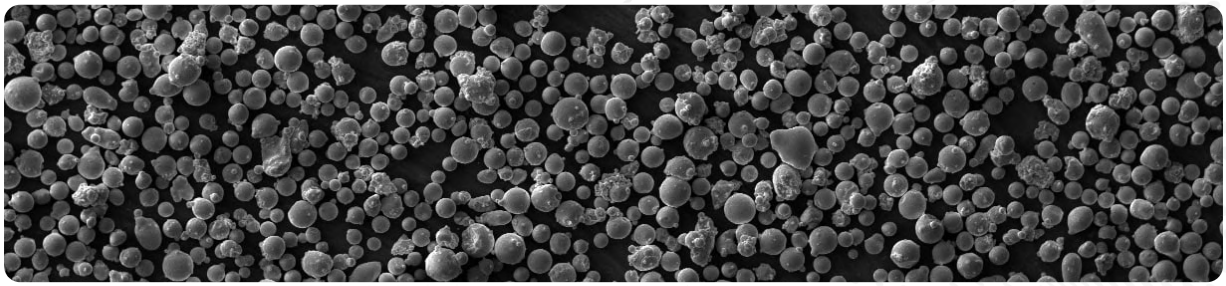
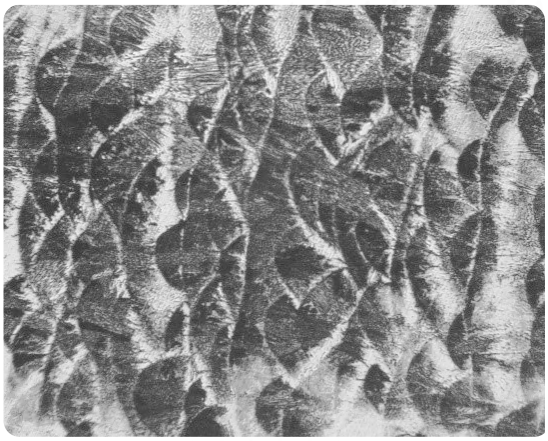


Nickel-chrome alloy Inconel 718

A nickel-chrome alloy with substantial amount of iron, niobium and molybdenum along with smaller quantities of aluminum and titanium, suitable for dispersion strengthening, This heat-resistant alloy combines resistance to corrosion and high strength, remarkable weldability and tolerance to formation of after-welding cracks. The alloy shows excellent durable strength and, currently, remains an important material for most components of aviation motors with operational temperature under 650 °C.

Chemical composition:

Al 0,2-0,8%	Ti 0,6-1,2%
Ta ≤ 0,05%	Si ≤ 0,35%
Cr 17-21%	C 0,02-0,08%
Cu ≤ 0,3%	Co ≤ 1%
Mo 2,8-3,3%	Mn ≤ 0,35%
Nb 4,75-5,5%	Ni 50-55%
O ≤ 0,03%	N ≤ 0,025%
S ≤ 0,015%	P ≤ 0,015%



Industries application:

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

Physical and mechanical properties*:

	Orientation XY	Orientation Z
Tensile strength	998-1100 MPa	804-1030 MPa
Yield Strength	709-830 MPa	568-684 MPa
Young's Modulus	108-178 GPa	114-134 GPa
Elongation	22-32%	12-28%
Hardness	319-344 HV0.5	
Density	8,19 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:

- parts of aircraft/spacecraft engines and hulls;
- instruments for control, measurement and automation;
- gas turbine components;
- oil and gas rigging;
- wheels for wheel pumps operating at high temperatures.