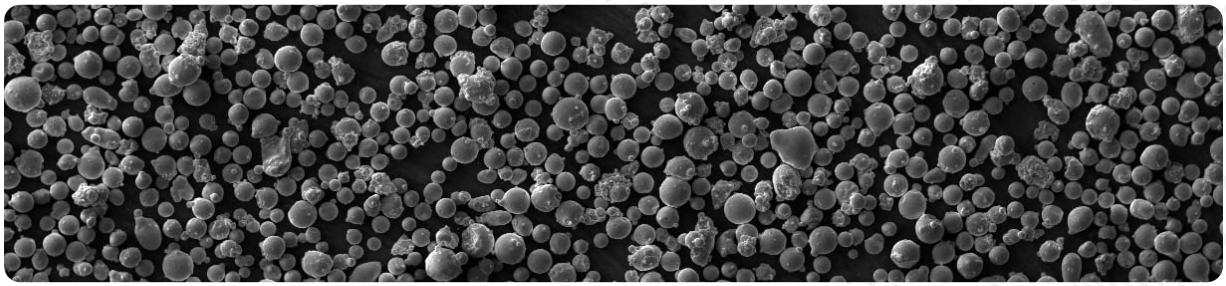
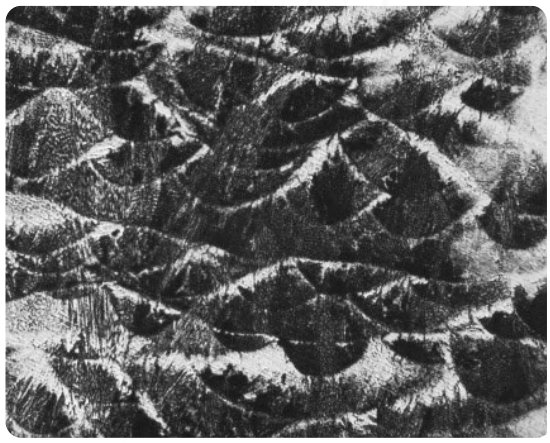


Nickel-chrome alloy Inconel 625

Suitable for dispersion strengthening, this nickel-chrome alloy with niobium doping, which, in combination with molybdenum, provides improved strength without additional thermal treatment. The range of operational temperatures of Inconel 625 heat-resistant alloy ranges from cryogenic temperatures to 980 °C. The alloy can withstand aggressive corrosive media and is particularly resistant to spot and slot corrosion. Withstands gas corrosion in high temperatures, shows good manufacturability, including weldability.

Chemical composition:

Al ≤ 0.4%	C ≤ 0.1%
Co ≤ 1%	Cr 20-23%
Cu ≤ 0.5%	Fe ≤ 5%
Mn ≤ 0.5%	Mo 8-10%
N ≤ 0.02%	Nb+Ta 3.15-4.15%
S ≤ 0.015%	O ≤ 0.03%
Si ≤ 0.5%	P ≤ 0.015%
Ti ≤ 0.4%	Ni balance



Industries application:

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

Physical and mechanical properties*:

	Orientation XY	Orientation Z
Tensile strength	950-1050 MPa	875-950 MPa
Yield Strength	700-750 MPa	575-625 MPa
Young's Modulus	165-185 GPa	135-155 GPa
Elongation	30-35%	35-45%
Hardness	300-330 HV0.5	
Density	8,44 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:

- heat protection screens;
- furnace equipment;
- heat-resistant lining of combustion chambers and burners;
- channels of gas turbine engines;
- equipment for chemical plants;
- special equipment of offshore platforms and marine vessels.