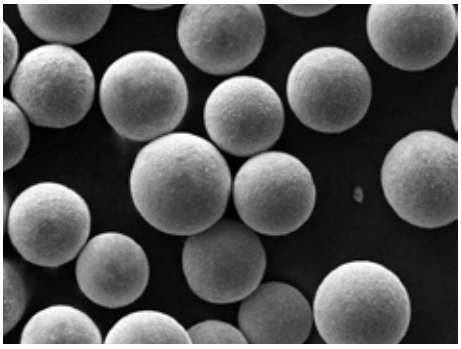
Ni625
Nickel Superalloy Powder

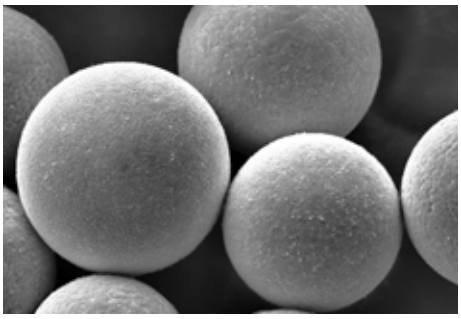
6K ADDITIVE

HIGH PERFORMANCE PARTS START WITH HIGH PERFORMANCE POWDER

From 6K's UniMelt® process, the world's only microwave plasma production system comes the highest performing and most versatile set of powders. Ni625 is Ni-Cr-Mo-Nb solid solution superalloy with high corrosion resistance, high strength, excellent fatigue resistance and high temperature stability. These properties makes this alloy interesting for marine and nuclear applications where corrosion is a concern and aerospace and racing car applications where high temperature stability is required. Poor machinability of Ni625 makes it ideal for additive manufacturing.

Ni625 is available in a variety of sizes, the representative properties are shown below for a fine cut.





NOMINAL CHEMISTRY			
Nickel	Balance	Silicon (Max)	0.50%
Chromium	20.0-23.0%	Titanium	0.40%
Molybdenum	8.00-10.00%	Aluminum	0.40%
Iron	5.00%	Carbon (Max)	0.10%
Niobium+Tantalum	3.15-4.15%	Oxygen (Max)	0.03%
Cobalt (Max)	1.00%	Nitrogen (Max)	0.02%
Copper (Max)	0.50%	Phosphorous (Max)	0.015%
Manganese (Max)	0.50%	Sulfur (Max)	0.015%

PHYSICAL PROPERTIES (TYPICAL) 15-45 µM	
Apparent Density	4.5 g/cm^3
Tap Density	5.2 g/cm^3
Hall Flow	17 s/50g

TENSILE PROPERTIES - Ni625					
	Powder	YS (MPa)	UTS (MPa)	EL (%)	RA (%)
XY	6K*	429	897	54	60
	ASTM F3056*	275	485	30	30
Z	6K*	345	886	55	59
	ASTM F3056*	275	485	30	30

* Annealed

6K Premium Nickel Powders

- Ultra clean
- No satellites
- High sphericity
- Free flowing
- High apparent density
- Low porosity
- Exceptional lot to lot consistency
- Conforms to AMS7001
- Conforms to ASTM F3056

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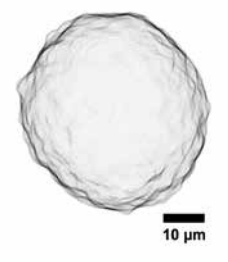

HIGH DENSITY POWDER

Unlike competitive technologies, 6K's process delivers highly dense, highly spherical powders without satellites, as shown in microCT of the particle.

DERIVED FROM SUSTAINABLE SOURCES

At 6K our powders are produced from sustainable sources including used powders and machine turnings. We leverage these input streams as feedstock for the UniMelt process, essentially turning scrap into high value AM powder. This process enables your organization to get value back from your past powder investment by participating in 6K Additive's powder buy-back program. We will buy your used powder, provide you a credit towards new premium powder for a wide variety of applications.

HIGH UNIMELT YIELD AND TUNABLE PSD

6K's UniMelt process can deliver the highest yield in the industry for your target PSD. With our unique microwave plasma technology our production run can be tailored for any additive manufacturing (AM) platform including powder bed fusion, EBM, Binder Jet, direct energy deposition and cold spray plus PM processes like MIM and HIP.

With 6K's UniMelt breakthrough technology we have the capability of producing almost limitless material combinations, allowing you to design with infinite possibilities for your application.

Ni625 Printed Impeller

Industrial impeller printed using 6K Additive plasma spheriodized powder at Sintavia on an EOS M290 L-PBF system.

6K Additive's production team has extensive experience in powder production, alloys and metal reclamation. Our 80,000 sq. ft. facility is ISO9001 certified and AS9100 certification is in process.

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032023