



# OptiPowder Ni625: Advanced Metal Powder for Extreme Conditions

OptiPowder Ni625 (UNS N06625) is a nickel-chromium-molybdenum-niobium alloy known for its high-temperature stability, excellent fatigue resistance, and superior corrosion resistance. This combination makes Ni625 an ideal choice for advanced manufacturing, particularly in challenging environments such as saltwater, alkaline waters, and both oxidizing and non-oxidizing media. Its ability to withstand extreme conditions and resist stress corrosion cracking makes it especially suited for marine applications like subsea components, nuclear reactor environments where radiation resistance is key, and biogas facilities dealing with highly corrosive gases.

Continuum Powders' OptiPowder Ni625 is a high-performance, sustainably manufactured Ni625, produced using our proprietary M2P Gas Atomization System—an advanced, plasma-based process that transforms reclaimed metals into high-quality spherical powders in a single step. Powered by green energy, our process significantly reduces carbon emissions, making our powders both effective and environmentally responsible.

Engineered for high performance, OptiPowder Ni625 delivers outstanding mechanical benefits like high

tensile strength, creep resistance, and weldability. These properties make it ideal for demanding applications across aerospace, energy, marine, and waste treatment industries. In aerospace, Ni625 is trusted for use in components such as turbine blades and exhaust systems, which require high durability under extreme heat and mechanical stress. In marine environments, Ni625 is ideal for seawater-exposed parts, where high corrosion resistance is critical to prevent material degradation.

*Nominal Composition (wt%)			
Ni	Balance	Si (max)	0.50
Cr	20.0-23.0	Ti (max)	0.40
Mo	8.00-10.00	Al (max)	0.40
Fe (max)	5.00	C (max)	0.10
Nb	3.15-4.15	P (max)	0.015
Co (max)	1.00	S (max)	0.015
Mn (max)	0.50		

\*ASTM F 3056-14

*Typical Physical Properties	
Apparent Density	>4.0 g/cc
Tapped Density	>5.0 g/cc
Hall Flow Time	<20 s/50g

\*Properties for LPBF PSD

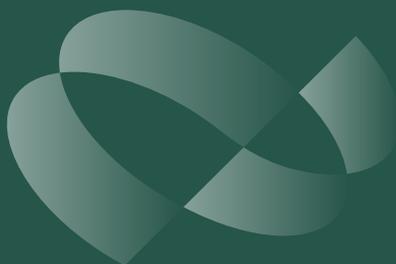
## OPTIPOWDER NI718 DATASHEET

Ni625 is also used in combustion chambers for rockets, engine parts for racing cars, and nuclear reactor components—applications that require both high strength and exceptional temperature stability to ensure reliability under intense conditions.

OptiPowder Ni625 supports various AM processes, including:

- **Laser Powder Bed Fusion (LPBF):** Ideal for producing complex parts with high accuracy and mechanical properties.
- **Electron Beam Melting (EBM):** Suitable for creating large, complex parts with excellent mechanical properties.
- **Binder Jetting:** A cost-effective AM process for producing larger parts with lower density and porosity.

Continuum Powders offers OptiPowder Ni625 in various particle size distributions (PSD) to suit your specific manufacturing needs. The properties presented here are for laser powder-bed fusion (LPBF) powder PSD.



**Contact us** to receive a quote and learn more about how OptiPowder Ni625 can enhance your production process and drive your next innovation.

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