Nickel Alloy 939

IN939

Gamma-prime strengthened nickel superalloy powder for gas-turbine hot-section parts and burner hardware.

Designations: IN939 · Alloy 939

Supply

Item	Value
Particle-size cuts	15–45 µm · 15–53 µm
Processes	LPBF
Minimum pack	1 kg (paid samples)
Packaging	Aluminium-foil bag · 1 kg sealed pack · Drum
Documents	Lot-specific COA · Particle-size report · Safety data sheet · Chemistry report
List price	Price on request

Chemical composition, wt.%

Element	Limit
Ni	Balance
Cr	21.5–23.5
Co	18.0–20.0
Ti	3.5–3.9
Al	1.7–2.1
W	1.8–2.2
Ta	1.2–1.6
Nb	0.8–1.2
C	0.12–0.18
Zr	0.01–0.14
B	0.004–0.010
Fe	≤0.50
Mo	≤0.30
O	≤0.02
N	≤0.015

Typical partner-plant datasheet limits, wt.%. The quoted lot COA governs.

Powder properties · LPBF screening window

Property	Value	Note
D10	≥15 μm	
D50	30–40 μm	
D90	≤60 μm	
Sphericity	≥0.90	Method to be confirmed
Apparent density	≥4.4 g/cm³	
Tap density	≥5.0 g/cm³	
Flow	≤18 s/50 g	Method and conditioning to be confirmed

A partner-plant datasheet screening basis for this grade; the delivered lot COA remains controlling.

Typical mechanical properties

Condition	Temperature	Tensile	Yield	Elongation	Note
Heat treated	25 °C	≥1200 MPa	≥1000 MPa	≥7%	
Heat treated	600 °C	≥1000 MPa	≥900 MPa	≥8%	

Partner-plant datasheet values for LPBF test bars at room temperature unless stated. Printed-part properties depend on machine, parameters, orientation, and post-processing.

Typical values, not a lot certificate. The certificate of analysis for the quoted lot governs. Formal quotations and commercial terms are valid only when issued from our official corporate email.

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