Nickel Alloy 738

IN738 · K438

Cast-type nickel superalloy powder for turbine vanes, blade repair, and other hot-section parts with complex cooling channels.

Designations: IN738 · Alloy 738 · K438

Supply

Item	Value
Particle-size cuts	15–45 µm · 15–53 µm · 53–150 µm
Processes	LPBF · DED
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	15.7–16.3
Co	8.0–9.0
Al	3.2–3.7
Ti	3.0–3.5
W	2.4–2.8
Ta	1.5–2.0
Mo	1.5–2.0
Nb	0.6–1.1
C	0.10–0.20
Zr	0.05–0.15
B	0.005–0.015
Fe	≤0.5
O	≤0.015
N	≤0.02

Typical partner-plant limits for K438 powder, wt.%. Compare with your IN738 or IN738LC specification; 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, XY	Room temperature	≥1000 MPa	≥700 MPa	≥10%	
Heat treated, XY	900 °C	≥500 MPa	≥400 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.

Request a quote: https://metal3dpowder.com/rfq/?product=in738 · Grade page: https://metal3dpowder.com/products/in738/
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