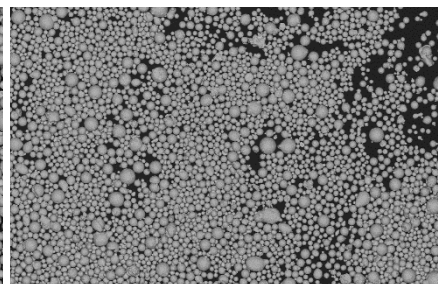
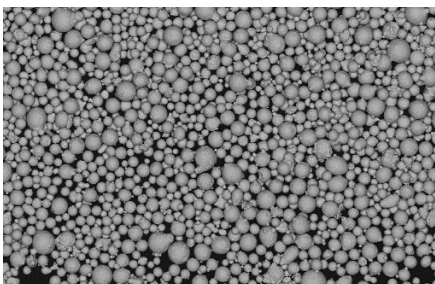
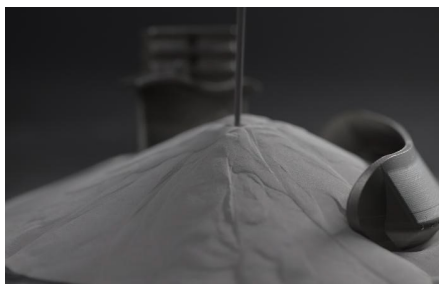


In625 Superalloy

【Great tensile strength, fatigue durability, corrosion preventive, oxidation resistance】

Material Introduction

In625 is a Ni-Cr based solid solution strengthened deformation superalloy. Its maximum operating temperature is 950 °C. It has good tensile strength, fatigue durability, corrosion preventive and oxidation resistance, and is resistant to stress corrosion under salt spray atmosphere.



Applications

It is suitable for manufacturing components such as aerospace engine casings, guide vanes, mounting edges and cylinders, fuel manifolds, etc.



Aircraft shell

Chemical Composition (wt.%)

C	Cr	Ni	Co	Nb	Mo	Al	Ti
≤0.1	20.0–23.0	Bal.	≤1.0	3.15–4.15	8.0–10.0	≤0.4	≤0.4
Fe	Si	Mn	S	P	Cu	O	N
≤5.0	≤0.5	≤0.5	≤0.015	≤0.015	≤0.07	≤0.02	≤0.02

Physical Property

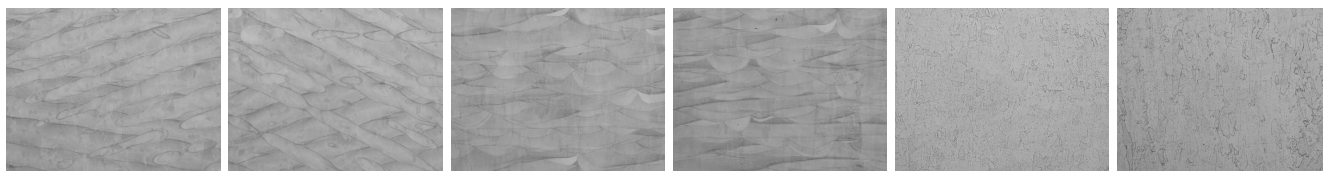
Granularity(μm)			Sphericity	Loose density (g/cm ³)	Tap density (g/cm ³)	Flowability (s/50g)
D10	D50	D90				
≥15	30–40	≤60	≥0.9	≥4.4	≥5.0	≤18

Parameters

Laser power(W)	Laser speed(mm/s)	Scanning spacing(mm)
275	1000	0.1



Metallographic Structure



Sedimentary microstructure (XY-direction)

Sedimentary microstructure (Z-direction)

Microstructure in heat-treated state
(left: XY direction; right: Z direction)

Mechanical Property

Heat-Treated			
Test Temperature	Tensile Strength/MPa	Yield Strength/MPa	Elongation/%
Room Temperature	≥830	≥410	≥35.0
815℃	≥350	≥240	≥30.0

Persistent Performance

State	Temperature	Direction	Test stress (MPa)	Fracture time (h)	Elongation (%)
Solid solution	815℃	XY	114	> 50.0	29.0
		Z	114	> 50.0	40.0

Advanced Powder Metallurgy Technology

The powder metallurgy technology and equipment production line—
Vacuum Induction Gas Atomization (AVI-VIGA)



Adapting Devices

10+ proprietary LPBF equipment systems supporting build sizes from 100 mm to 1500 mm.



MT170H

MT280

MT400M

MT450

MT650

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