



forAM[®] Al-HS1 20-63 GA

Aluminium alloy powder for Additive Manufacturing

forAM Al-HS1 GA is a novel precipitation hardening Al alloy specifically developed for LPBF process. Gas atomized powder has good flowability and spreadability. It is a medium to high strength aluminium alloy that can be direct aged after printing to achieve high strength and hardness. The ageing treatment provides dimensional stability that also allows a high operating temperature.

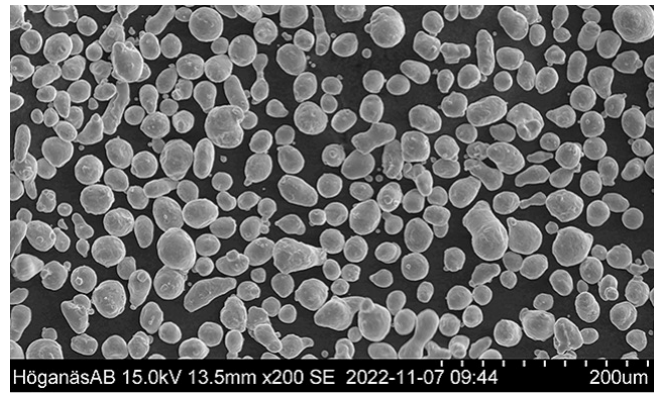
Equivalent materials:

» No directly comparable materials

For more information on forAM product line and other of Höganäs products, please contact your local sales representative.

Powder properties

Chemical composition, (typical values)	
Element	Content, %
Al	Balance
Mn	4.8
Cr	0.8
Zr	0.8



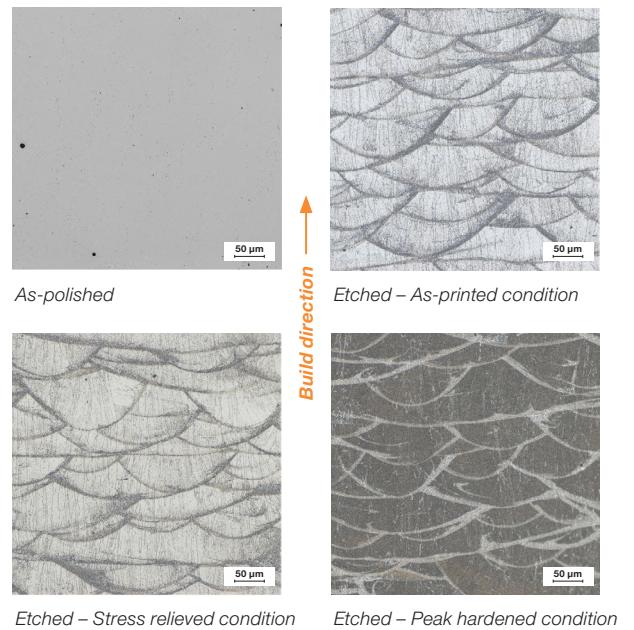
Typical powder properties		
Nominal particle range	20-63 µm (max 5% over and under size)	MPIF05, ASTM B214, ISO4497
Carney flow	15 s/50 g	MPIF03, ASTM B964, ISO4490
Apparent density	1.40 g/cm ³	MPIF04, ASTM B212, ISO3923/1
Tap density	1.76 g/cm ³	ISO 3953

Mechanical properties

Surface condition is machined			
Heat treatment	As-printed ⁽¹⁾	Stress relieved ⁽²⁾	Direct aged ⁽³⁾
Printed in Z-direction – Build direction			
UTS (MPa)	310	310	440
YS (MPa)	250	230	340
Elongation (%)	25	22	7

Heat treatment	As-printed ⁽¹⁾	Stress relieved ⁽²⁾	Direct aged ⁽³⁾
Printed in X/Y-direction – Perpendicular			
UTS (MPa)	310	310	450
YS (MPa)	250	240	360
Elongation (%)	25	21	10
Hardness (HV10)	103	108	135

- (1) All tensile test bars are machined from cylindrical printed bars
- (2) Stress relieved at 300°C for 3h in air
- (3) Direct aged by Ageing at 350°C for 24h in air



Etching in Flicks reagent 100 ml H₂O + 1 ml HF

Standard packaging:

10 kg, 10L PE drum filled with Ar protective gas
(Other tailored particle sizes and packaging are available under conditions)