

## forAM<sup>®</sup> 316L NG 15-63

Austenitic stainless steel for additive manufacturing

### General material description

Höganäs forAM 316L NG is a vacuum induction melted, inert gas atomized, and spherical powder for additive manufacturing.

The composition is designed to have high mechanical strength and high elongation. The low carbon content compared to 316 grade minimize carbon precipitations and improve corrosion resistance. It has strict chemical control and low Cobalt content resulting in a low radiation activation, making the material suitable for use in nuclear applications.

It has good corrosion resistance to atmospheric corrosion as well as many organic and inorganic chemicals. It is commonly used in chemical, marine and nuclear industries

### Equivalent materials:

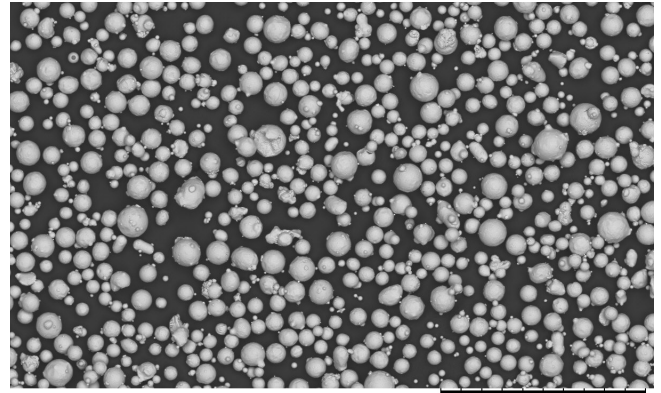
- » 1.4404
- » AISI 316L
- » UNS S31603
- » X2CrNiMo17-12-2
- » X2CrNiMo17-12-3

Scan the QR code to learn more about the forAM product line and other Höganäs products.



## Powder properties

Chemical composition, (typical values)	
Element	Content, %
Cr	17.5
Ni	12
Mo	2.6
Co	0.01
Fe	Balance

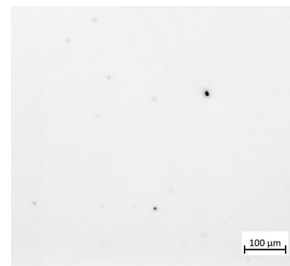


2024/04/19 07:43 A D8.0 x250 300 µm

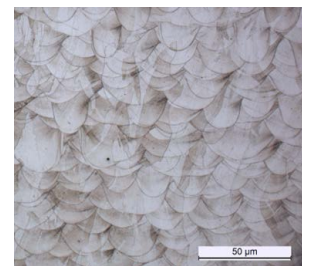
Typical powder properties		
Nominal particle range	15-63 µm (max 5% over and under size)	MPIF05, ASTM B214, ISO4497
Hall flow	15 s/50 g	MPIF03, ASTM B213, ISO4490
Apparent density	4.3 g/cm <sup>3</sup>	MPIF04, ASTM B212, ISO3923/1

## Mechanical properties

Surface condition is machined		
Heat treatment	SR <sup>(1)</sup>	SA <sup>(2)</sup>
Printed in Z-direction – Build direction		
UTS (MPa)	590	555
YS (MPa)	480	355
Elongation (%)	53	63
Impact energy, notch in Y direction (J)	170	190

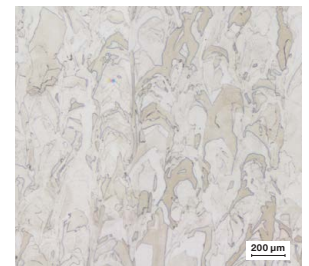


As polished



Stress relieved – Build direction

Heat treatment	SR <sup>(1)</sup>	SA <sup>(2)</sup>
Printed in X/Y-direction – Perpendicular		
UTS (MPa)	650	600
YS (MPa)	535	370
Elongation (%)	43	51
Impact energy, notch in Z direction (J)	165	165
Hardness (HV10)	216	197



Solution annealed – Build direction

(1) Stress relieved at 370 °C in air for 2h

(2) Solution Annealed at 1080 °C in Vacuum followed by gas quench

## Standard packaging:

30 kg (6x5 kg, 2.5 L PE bottles packed in cardboard box).

Other tailored particle sizes and packaging are available under conditions.