



Metal powders for serial production of Additive Manufacturing components

AM 420 Sieve Code 5

Höganäs stainless steel AM 420 Sieve Code 5 is a gas atomised, spherical powder for Additive Manufacturing applications. It is typically used for the Directed Energy Deposition (DED, laser cladding)⁽¹⁾ processes.

AM 420 is an alloy with higher carbon content than ferritic stainless steel which enables hardening to about 45 HRC, after building. It is used when mechanical properties are more important than corrosion resistance. Typical applications for martensitic grades: cutting utensiles/ surgical and dental instruments/ fasteners, springs and multi-purpose tools.

For more information, please contact your local sales representative or send an e-mail to additivemanufacturing@hoganäs.com

Features:

- Powder with consistent C level will provide stable hardness level of the build components
- Powder with good flowability
- Low tendency for cracking during building
- Final component have very good milling and grinding properties



The gas atomisation process employed for Additive Manufacturing powders, produces powders which must pass stringent controls at each manufacturing step. Certified production units ensure chemical and physical properties according to specifications.

Raw materials are carefully selected and sourced from certified suppliers. The individual raw materials are melted together in our induction furnaces. Prior to atomisation the chemical composition of the melt is analysed and a correction is made if necessary. Spherical powders without satellites is the characteristic morphology of Höganäs gas atomisation. This will ensure excellent flow and spreadability of the powder. After atomisation, the powders are sieved according to agreed requirements and the powder properties are carefully controlled on each lot.



Powders are packed in 5 kg air tight plastic bottles. The packing technique ensures a dry and contamination free powder as well as a uniform grain size distribution.

Typical alloy composition AM 420 Sieve Code 5
Fe (balance) ⁽²⁾
Cr 12.5%
Mn 1.2%
C 0.22%
Si 0.5%

Typical powder properties
53-150 µm balance ⁽³⁾
> 150 µm max 5% ⁽³⁾
< 45 µm max 5%
Hall flow rate 16 s/50g ⁽⁴⁾
Apparent density 4.1 g/cm ³ ⁽⁵⁾

- 1) ASTM F2792
- 2) DIN 51008-2; DIN 51009, ISO 9556, ISO 4935, EN 10276-2, ISO 15351
- 3) MPIF05, ASTM B 214, ISO 4497
- 4) MPIF03, ASTM B 213, ISO 4490
- 5) MPIF04, ASTM B 212, ISO 3923/1