Höganäs nickel based powder AM 718 Sieve Code 6 is a gas atomised, spherical powder for Additive Manufacturing applications. It is typically used for the Selective Laser Fusing (SLM) processes.

AM 718 is a precipitation hardenable nickel-based alloy, typically used for its mechanical properties at temperatures up to 700°C. This alloy is appreciated for its high strength, ease of fabrication and good oxidation resistance. Parts made from AM 718 can be heat-treated to obtain best combination of tensile and stress rupture properties.

Common applications are found in various turbine components such as rings, casings and fasteners. Down-hole and wellhead components in oil and gas explorations are other examples of use.

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

Features:
- Particle size distributions adopted to fit different SLM equipments
- Very good building properties
- Industrial scale production
- Powder with good flow and spreadability
- Can be applied in layer thickness down to 30 μm
- Finished parts density > 99.9%
- Stable batch-to-batch in order to guarantee consistency

www.hoganas.com/additivemanufacturing
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.

<table>
<thead>
<tr>
<th>Typical alloy composition AM 718 Sieve Code 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fe (balance)</td>
</tr>
<tr>
<td>Ni 52%</td>
</tr>
<tr>
<td>Cr 18.5%</td>
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<tr>
<td>Mo 3%</td>
</tr>
<tr>
<td>Nb 5.2%</td>
</tr>
<tr>
<td>Ti 0.9%</td>
</tr>
<tr>
<td>Fe 0.7%</td>
</tr>
<tr>
<td>Si 0.4%</td>
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<tr>
<td>C max 0.04%</td>
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</tbody>
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<table>
<thead>
<tr>
<th>Typical powder properties</th>
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</thead>
<tbody>
<tr>
<td>20-53µm balance</td>
</tr>
<tr>
<td>&gt; 63 µm max 1%</td>
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<tr>
<td>&lt; 20 µm max 2%</td>
</tr>
<tr>
<td>Hall flow rate 16 s/50g</td>
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<tr>
<td>Apparent density 4.3 g/cm³</td>
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<tr>
<td>Tap density 5.2 g/cm³</td>
</tr>
</tbody>
</table>

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
6) REPORT MTC 02082017

<table>
<thead>
<tr>
<th>Tensile test result in built Z direction</th>
</tr>
</thead>
<tbody>
<tr>
<td>As built</td>
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<tr>
<td>Yield strength (MPA)</td>
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<tr>
<td>Tensile strength (MPA)</td>
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<tr>
<td>Break elongation (%)</td>
</tr>
</tbody>
</table>

Tested on 3 different SLM machine brands
Heat treated all to ASTM F3055-14A and AMS 2774