ADDITIVE MANUFACTURING
POWDER
W722 AMPO / FE-BASED ALLOYS

Available Product Shapes

| 15 - 45 µm | 45 - 90 µm |

Product Description
Precipitation hardening nickel martensitic (maraging) steel, material number 1.2709, which offers a good combination of strength and toughness. Can be printed very easily without additional heating of the building platform or chamber. The achievable hardness of 55 HRC makes this material a universal solution for tool steel applications in which conformal cooling is required, such as die casting applications.

Properties
Particle size distribution 15 - 45 µm:
- D10[µm] 18 - 24
- D50[µm] 29 - 35
- D90[µm] 42 - 50
Apparent density* ≥ 3.5
Measurement of particle size distribution according to ISO 13322-2 (Dynamic image analysis methods);
* Measurement of apparent density is based on ASTM B964 resp. DIN EN ISO 3923-1 and relates to our typical measured values

Achievable mechanical properties of printed part after heat treatment:
- Tensile strength (Rm) 2030 ± 70 MPa
- Yield strength (RP₀,₂) 1950 ± 70 MPa
- Elongation (%) 6 ± 2
- Hardness 53 ± 2 HRC
- Impact toughness (ISO V) 18 ± 2 J

Applications
- 3D Printing - direct metal deposition
- 3D Printing - selective laser melting
- Automotive
- Automotive Racing
- Civil and mechanical engineering
- Forging Applications
- High Pressure Die-Casting
- Injection Molding
- Mechanical Engineering / Machine Building General
- Other Components
- Powder for additive manufacturing
- Unknown Components Application

Material designation
1.2709 SEL

Chemical composition

<table>
<thead>
<tr>
<th>C</th>
<th>Si</th>
<th>Mn</th>
<th>P</th>
<th>S</th>
<th>Mo</th>
<th>Ni</th>
<th>Co</th>
<th>Ti</th>
</tr>
</thead>
<tbody>
<tr>
<td>≤ 0,03</td>
<td>≤ 0,10</td>
<td>≤ 0,15</td>
<td>≤ 0,01</td>
<td>≤ 0,01</td>
<td>4,90</td>
<td>18,00</td>
<td>9,30</td>
<td>1,10</td>
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## Heat treatment

<table>
<thead>
<tr>
<th>Heat treatment</th>
<th>Temperature (°C / °F)</th>
<th>Soaking time:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solution annealing</td>
<td>820 / 1508</td>
<td>1h / air, gas</td>
</tr>
<tr>
<td>Precipitation hardening</td>
<td>490 / 914</td>
<td>6h / air</td>
</tr>
</tbody>
</table>

For more information see [www.voestalpine.com/bohler-edelstahl](http://www.voestalpine.com/bohler-edelstahl)