

ADDITIVE MANUFACTURING POWDER

W722 AMPO / FE-BASED ALLOYS

Application Segments

Additive Manufacturing Application

Available Product Variants

15 - 45 µm

45 - 90 µm

Product Description

Precipitation hardening nickel martensitic (marging) steel, material number, 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.

Process Melting

VIGA

Applications

- > 3D Printing - direct metal deposition
- > Motorsport industry
- > High Pressure Die-Casting
- > Other Components
- > 3D Printing - selective laser melting
- > Civil and mechanical engineering
- > Injection Molding
- > Powder for additive manufacturing
- > Automotive
- > Forging Applications
- > Mechanical Engineering

Technical data

Material designation	
1.2709 (Marage 300)	Market grade
1.2709	SEL
X3NiCoMoTi18-9-5	EN

Chemical composition (wt. %)

C	Si	Mn	P	S	Mo	Ni	Co	Ti
≤ 0,03	≤ 0,10	≤ 0,15	≤ 0,01	≤ 0,01	4.9	18	9.3	1.1

Powder Properties

Particle Size Distribution *

Typical Values	D10	D50	D90
[µm]	18-24	29-35	42-50

* Measurement of particle size distribution according to ISO 13322-2 (Dynamic image analysis methods);

Apparent density**	min. 3.5 g/cm ³
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** Measurement of apparent density is based on ASTM B964 resp. DIN EN ISO 3923-1 and relates to our typical measured values

Mechanical Properties

With according Heat Treatment

Tensile strength (Rm) (MPa)	1,960 to 2,100
Yield strength (RP _{0.2}) (MPa)	1,880 to 2,020
Elongation (%)	4 to 8
Hardness (HRC)	51 to 55
Impact Toughness (ISO-V) (J)	16 to 20

Heat treatment

Solution annealing

Temperature	min. 820 °C	Soaking time: 1h / air, gas
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Precipitation hardening

Temperature	min. 490 °C	Holding time: 6h / air
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If other available product variants are listed in addition to long products, please note that these may differ in terms of melting process, technical data, delivery and surface condition as well as available product dimensions. For mandatory technical specifications, other requirements and dimensions, please contact our regional voestalpine BÖHLER sales companies. The data contained in this brochure is merely for general information and therefore shall not be binding on the company. We may be bound only through a contract explicitly stipulating such data as binding. Measurement data are laboratory values and can deviate from practical analyses. The manufacture of our products does not involve the use of substances detrimental to health or to the ozone layer.