

ADDITIVE MANUFACTURING POWDER

L718 API AMPO / NI-BASED ALLOYS

Application Segments

Additive Manufacturing Application

Available Product Variants

15 - 45 µm

45 - 90 µm

Product Description

The BÖHLER L718 API AMPO is a hardenable nickel-base super alloy. This high heat-resistant material shows good strength properties at elevated temperatures up to 750 ° C, as well as excellent creep resistance up to 700 ° C. In addition, it shows excellent corrosion resistance and good printability. Essentially, the same properties can be achieved with printed components made from this powder as with bar material.

Process Melting

VIGA

Applications

- > 3D Printing - direct metal deposition
- > Civil and mechanical engineering
- > Other Automotive Components (Turbochargers, Piston Rings, Sensors, etc.)
- > Other Power Generation Components
- > 3D Printing - selective laser melting
- > Components for Industrial Gas Compressors
- > Other Components
- > Powder for additive manufacturing
- > Motorsport industry
- > CPI (incl. LNG, Urea)
- > Other Oil and Gas + CPI components

Technical data

| Material designation | Market grade |
|---------------------------------|--------------|
| Alloy 718API | Market grade |
| NiCr19NbMo/ NiCr19Fe19Nb5Mo3 | EN |
| N07718 | UNS |

Chemical composition (wt. %)

| C | Cr | Mo | Ni | Ti | Al | Nb | B | Fe |
|------|----|----|------|------|-----|----|-------|------|
| 0.02 | 18 | 3 | Rest | 0.95 | 0.5 | 5 | 0.003 | 18.5 |

Powder Properties

Particle Size Distribution 15-45µm*

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

* Measurement of particle size distribution is based on ISO 13322-2 (Dynamic image analysis methods);

Apparent density** | min. 3.5 g/cm³

** Flowability and apparent density are based on DIN EN ISO 4490 resp. DIN EN ISO 3923-1.

Mechanical Properties

With according Heat Treatment

| | |
|---|----------------|
| Tensile strength (Rm) (MPa) | 1,290 to 1,390 |
| Yield strength (RP _{0.2}) (MPa) | 1,050 to 1,110 |
| Elongation (%) | 26 to 32 |
| Hardness (HRC) | 43 to 49 |
| Impact Toughness (ISO-V)* (J) | 58 to 68 |

* a -60 °C

Mechanical strength according to heat treatment API6acra - 150ksi

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.

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ONE STEP AHEAD.