ADDITIVE MANUFACTURING POWDER

N700 AMPO / FE-BASED ALLOYS

Application Segments

Additive Manufacturing Application

Available Product Variants

15 - 45 µm

45 - 90 µm

Product Description

BÖHLER N700 AMPO (17-4 PH) is a precipitation hardening nickel martensitic steel. Thanks to its alloying system, this material has excellent corrosion resistance. Can be printed very easily without additional heating of the platform or chamber and, after solution annealing and aging, hardens up to approx. 40 HRC.

Process Melting

VIGA

Applications

- 3D Printing - direct metal deposition
- Automotive
- Components for Chemical plants (incl. LNG, FGD, Urea, LDPE, etc.)
- Mechanical Engineering
- Other Components
- Powder for additive manufacturing
- 3D Printing - selective laser melting
- Motorsport industry
- Consumer Goods - General
- Oil & Gas / CPI
- Other Oil and Gas + CPI components
- Wind Power
- Aerospace
- Civil and mechanical engineering
- General Components for Mechanical Engineering
- Other Aerospace Components
- Other Power Generation Components

Technical data

Material designation	
17-4 PH	Market grade
1.4542	SEL
X5CrNiCuNb16-4	EN
S17400	UNS

Chemical composition (wt. %)

C	Cr	Ni	Cu	Nb
0.04	16.25	4	4	0.34

Powder Properties

Particle Size Distribution 15-45µm*

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. 3.4 g/cm³

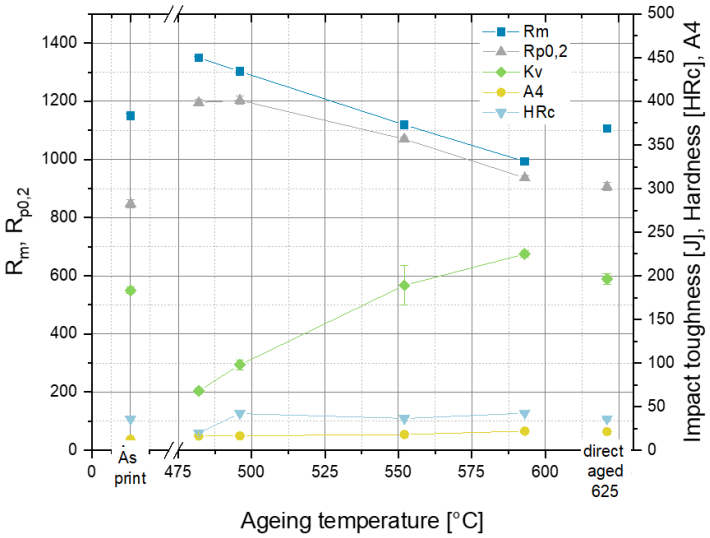
** Measurement of apparent density is based on ASTM B964 resp. DIN EN ISO 3923-1 and relates to our typical measured values

Mechanical Properties

With according Heat Treatment

Tensile strength (Rm) (MPa)	1,000 to 1,300
Yield strength ($RP_{0,2}$) (MPa)	900 to 1,200
Elongation (%)	15 to 21
Hardness (HRc)	36 to 43
Impact Toughness (ISO-V) (J)	75 to 230

Analog-Hardening Tempering Curve



Solution annealing:
1040°C / 30min / air quenching

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.

voestalpine BÖHLER Edelstahl GmbH & Co KG
Mariazeller Straße 25
8605 Kapfenberg, AT
T. +43/50304/20-0
E. info@bohler-edelstahl.at
https://www.voestalpine.com/bohler-edelstahl/de/