

# ADDITIVE MANUFACTURING POWDER

## H525 AMPO / FE-BASED ALLOYS

### Application Segments

Additive Manufacturing Application

### Available Product Variants

15 - 45 µm

45 - 90 µm

### Product Description

Heat resisting austenitic steel. Superior high temperature strength and excellent toughness. Heat resistance in air up to 1150°C. Good resistance in oxidizing, nitrogenous and low oxygen gases. Medium resistance in sulphurous, oxidizing gases but sensitive to the action of reducing sulphurous gases. Embrittlement only occurs after prolonged exposure in the temperature range of 650 to 900°C. Therefore in the case continuous working temperatures more than 950°C are recommended.

### Process Melting

VIGA

### Applications

- > 3D Printing - direct metal deposition
- > Mechanical Engineering
- > Heat Exchanger
- > 3D Printing - selective laser melting
- > High temperature components
- > Oil & Gas / CPI
- > Other Oil and Gas + CPI components
- > Burner Nozzles

### Technical data

Material designation	
1.4841	SEL
X15CrNiSi25-20	EN
S31400	UNS
314	AISI

### Chemical composition (wt. %)

C	Si	Mn	Cr	Ni	Fe
0.08	1.7	1.2	24.8	19.8	Rest

## 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/cm <sup>3</sup>
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\*\* Flowability and apparent density are based on DIN EN ISO 4490 resp. DIN EN ISO 3923-1

## Mechanical Properties

### As Printed

Tensile strength (Rm) (MPa)	575 to 625
Yield strength (RP <sub>0.2</sub> ) (MPa)	475 to 525
Elongation (%)	45 to 55
Hardness (HV)	155 to 195

We expressly point out that the values given are only guide values. The mechanical properties highly depends on the pressure parameters or heat treatment.

### With according Heat Treatment

Tensile strength (Rm) (MPa)	555 to 585
Yield strength (RP <sub>0.2</sub> ) (MPa)	350 to 370
Elongation (%)	50 to 60

## Heat treatment

### Solution annealing

Temperature	1,100 °C	for 30 min
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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.