Printdur® CoCrF75

Cobalt-chromium alloy for high temperature and medical applications

GENERAL INFORMATION

Printdur® CoCrF75 can be used in two different application areas:

- high-temperature applications
- medical engineering

Printdur® CoCrF75 has an excellent resistance to thermal shock in the heat-treated condition and is resistant to oxidizing and reducing atmospheres up to approx. 1150 °C. Due to these properties, Printdur® CoCrF75 is preferred for high-temperature applications.

In addition to its excellent thermal shock resistance and the high resistance to oxidizing and reducing atmospheres, Printdur® CoCrF75 with other properties in medical engineering:

- Very good biocompatibility
- Very high corrosion resistance

Printdur® CoCrF75 is produced according to the required chemical composition of the specifications ISO 5832-12 and ASTM F1537. Printdur® CoCrF75 is therefore suitable for the production of CoCrMo implants. In combination with the certification of our production according to DIN EN ISO 13485 (quality management for medical products) Printdur® CoCrF75 is the first choice for applications in medical engineering.

POWDER PROPERTIES

The powder is produced by gas atomization. This manufacturing process ensures spherical powder particles in combination with excellent flow characteristics.

Chemical composition [weight-%]

C	Si	Mn	Cr
< 0,14	< 1,0	< 1,0	28,0
Mo	Ni	Fe	N
6,0	< 0,1	< 0,75	< 0,25

Powder characterization[1]

Bulk density	Flow characteristics
4.63 g/cm³	16.0 s/50g

[1] The properties were determined in the particle size distribution of 10 - 45 µm.

ADDITIVE MANUFACTURING[2]

Printdur® CoCrF75 can be processed on LPBF systems. Please contact us for further information.

[2] Process parameters for LPBF systems have been developed for our alloys and can be supplied on request. Depending on the system, it may be necessary to deviate from these recommendations. We would be pleased to support you in the implementation.

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MECHANICAL PROPERTIES[3]

The mechanical properties (as build) listed below were achieved with a particle size distribution of 10 - 45 µm. The used system was an EOS M290 with a layer thickness of 40 µm.

$R_{p0,2}$	630 MPa
R_m	1080 MPa
$A_{5,65}$	27 %
Av	22 J
HRC	27

[3] The mechanical properties were determined in vertical direction and thus represent the lower limit of the properties due to the component orientation / print orientation of the alloy. A different - e.g. horizontal - orientation of the specimens / components generally leads to higher mechanical properties.

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