

CL 101NB Nickel-based alloy

Nickel-based alloy powder (Inconel 625), chemical composition according to ASTM B446-03 UNS N06625

With an appropriate approval* CL 101NB can be used for production of components for high-temperature applications.

28

Ni

58,69

CHEMICAL COMPOSITION

Component	Indicative value (%)
Ni	Balance
Cr	20,0 – 23,0
Nb + Ta	3,15 – 4,15
Mo	8,0 – 10,0
Fe	0,0 – 5,0
Ti	0,00 – 0,40
Al	0,00 – 0,40
Co	0,0 – 1,0
C	0,0 – 0,1
Mn	0,00 – 0,50
Si	0,00 – 0,50
P	0,000 – 0,015
S	0,000 – 0,015

RANGE OF APPLICATION

With an appropriate approval* CL 101NB can be used for production of parts for high-temperature applications. Typical applications are turbine construction (aviation or stationary turbines) or exhaust tracts within motor sports applications.

TECHNICAL DATA AFTER RECOMMENDED HEAT TREATMENT

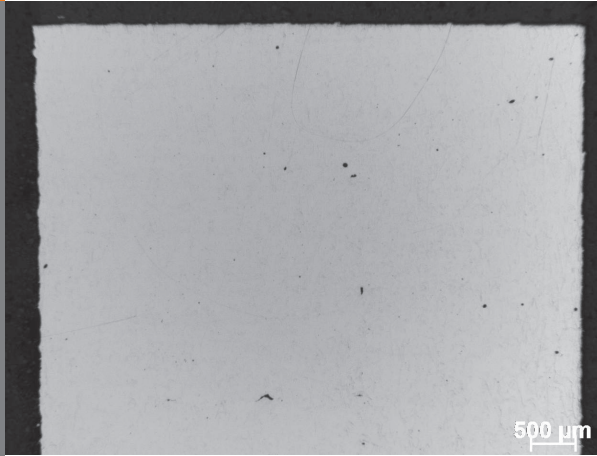
Yield point $R_{p0,2}$	640 – 670 N/mm ²
Tensile Strength R_m	920 – 990 N/mm ²
Elongation A	20 – 32 %
Young's modulus ¹	approx. 200.000 N/mm ²
Thermal conductivity λ ¹	approx. 10 W/mK
Coefficient of thermal expansion ¹	approx. $12,8 \cdot 10^{-6} K^{-1}$

¹ Specification according to the material manufacturer's data sheet.

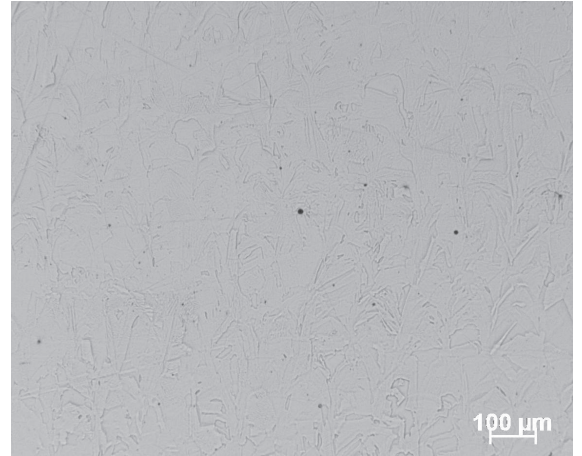
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MICROSECTION

Test piece
(x 20 magnification)



Test piece
(x 100 magnification)



HEAT TREATMENT

Carry out heat treatment in argon atmosphere.
Heat to 875 °C. Maintain temperature for 30 minutes.

MICROSTRUCTURE

Components made from nickel-based alloy CL 101NB display a homogeneous, dense structure after they are manufactured by means of the metal laser melting process LaserCUSING®.

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All of the specified figures are approximate figures. The figures which are provided reflect the current level of our knowledge and are dependent on process and machine parameters. The information provided on this material data sheet is therefore not binding and is not deemed to be certified.

* The approval is branch-specific and/or application-specific and it must be, therefore, carried out by the consumer/user. Approval of materials by Concept Laser GmbH is not available.