

## CL 101NB Nickel-based alloy

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

CL 101NB is a nickel-based alloy for the 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

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

<sup>1</sup> Specification according to the material manufacturer's data sheet.

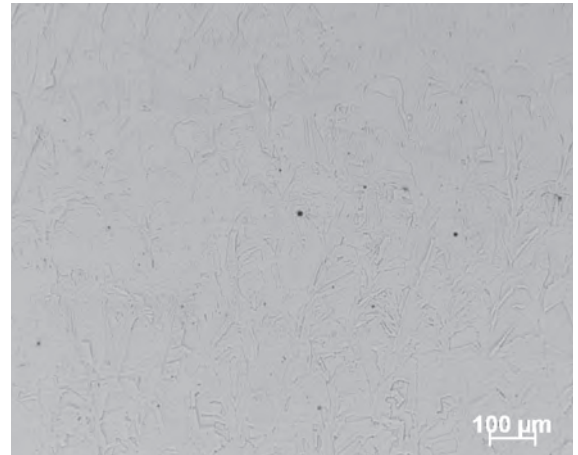
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## MICROSECTION

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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