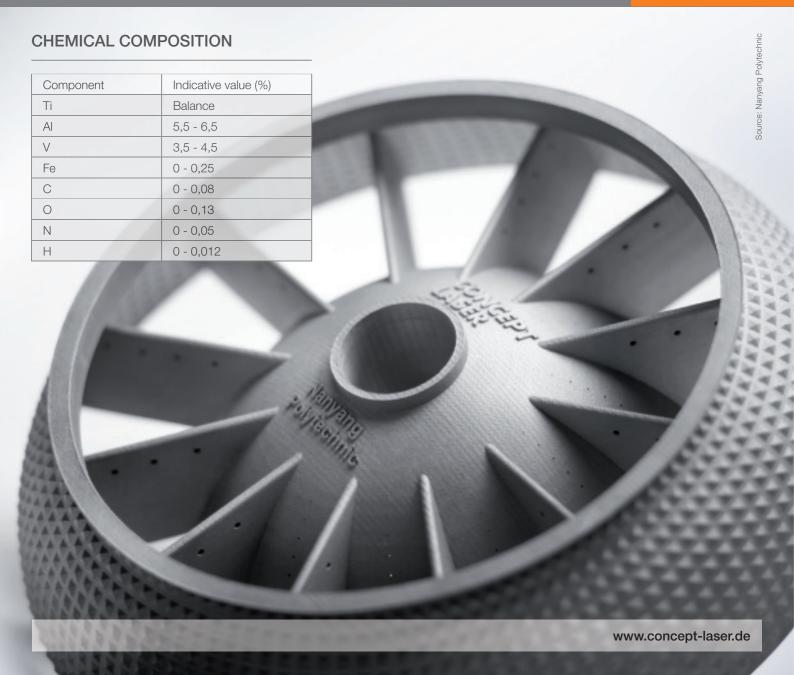


# **CL 41TI ELI** Titanium alloy

Titanium alloy Ti6Al4V (powder) chemical composition et al. according to ASTM F136-02a (ELI Grade 23)

CL 41TI ELI is a titanium alloy for the production of lightweight components in the field of motorsport and aerospace industries as well as implants in the medical technology field.

22 **Ti** 47,88



### **RANGE OF APPLICATION**

The material is used for manufacturing lightweight prototypes, unique or series production parts in the field of motorsports and aerospace industries as well as medical technology. Examples of application: components with integrated cooling structure, bionic components and bone-foams with bio-analogue structure.

### TECHNICAL DATA AFTER RECOMMENDED HEAT TREATMENT

Yield Point R <sub>e</sub> <sup>1</sup>	900 - 1.200 N/mm²
Tensile Strength $R_{\rm m}^{-1}$	1.100 -1.300 N/mm <sup>2</sup>
Elongation A 1.2	5-10 %
Young's modulus <sup>3</sup>	approx. 110 · 10 <sup>3</sup> N/mm <sup>2</sup>
Thermal conductivity $\lambda$ $^3$	7 W/mK
Coefficient of thermal expansion <sup>3</sup>	9 · 10 <sup>-6</sup> K <sup>-1</sup>

<sup>&</sup>lt;sup>1</sup> Tensile test at 20°C according to DIN EN 50125

## CL 41TI ELI Titanium alloy

### **MICROSECTION**

Test piece (x 20 magnification)

Test piece (x 100 magnification)



### **MICROSTRUCTURE**

Perform heat treatment under an argon atmosphere. Heat up in 4 hours to 840°C. Maintain temperature for 2 hours. Allow the components to cool down to 500°C in the oven.

Components made from titanium alloy CL 41TI ELI display a homogeneous, dense structure after they are manufactured by means of the metal laser melting process LaserCUSING®.

#### Concept Laser GmbH

**HEAT TREATMENT** 

An der Zeil 8 D 96215 Lichtenfels Sales Department info@concept-laser.de T: +49 (0) 95 71. 949 238

F: +49(0)9571.949249



<sup>&</sup>lt;sup>2</sup> By using a special heat treatment a higher elongation can be achieved.

<sup>&</sup>lt;sup>3</sup> Specification according to the material manufacturer's data sheet.