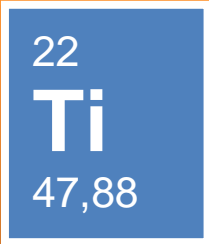




## CL 42TI Commercially Pure Titanium

Commercially Pure Titanium in powder form, chemical composition includes ASTM F67 and ASTM B348 grade 2

CL 42TI is a titanium alloy used in the manufacture of implants for the medical industry as well as in lightweight components for the aviation industry.



### CHEMICAL COMPOSITION

Component	Indicative value (%)
Ti	Balance
Fe	0 – 0,30
O	0 – 0,25
C	0 – 0,08
N	0 – 0,03
H	0 – 0,015

## RANGE OF APPLICATION

Prototypes, one-off or series parts for the aviation, aerospace and medical industries, for example functional components with an integrated cooling structure, bionically optimized functional components, bone foam with a bioanalog structure as bone replacement material, individual biocompatible implants or prostheses with a microcellular structure.

## TECHNICAL DATA AFTER RECOMMENDED HEAT TREATMENT

Yield strength <sup>1</sup>	530 – 570 N/mm <sup>2</sup>
Tensile Strength R <sub>m</sub> <sup>1</sup>	600 – 620 N/mm <sup>2</sup>
Elongation A <sup>1,2</sup>	15,5 – 20 %
Young's modulus <sup>1</sup>	110 kN/mm <sup>2</sup>
Thermal conductivity λ <sup>3</sup>	21 W/mK
Coefficient of thermal expansion <sup>3</sup>	8,9 · 10 <sup>-6</sup> K <sup>-1</sup>

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

<sup>2</sup> Special heat treatment can produce a higher elongation on fracture.

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

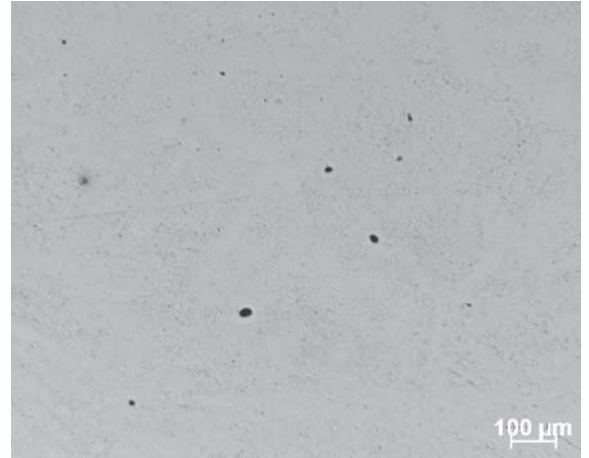
**CL 42TI**  
Commercially  
Pure Titanium

## MICROSECTION

Testpiece  
(x 20 magnification)



Testpiece  
(x 100 magnification)



## HEAT TREATMENT

Carry out heat treatment in argon atmosphere.  
Heat to 1000 °C in 4 hours. Maintain temperature  
for 1 hour. Let components cool to 70 °C in oven.

## MICROSTRUCTURE

Components from the titanium alloy CL 42TI show a  
homogenous, dense structure following construction  
with the metal laser melting process.

**EDMIT** Industries Inc  
1400 Boulevard Ford  
Chateaguay, Quebec  
Canada, J6J 4Z2

customerservice@edmitinc.com  
T: 1-450-691-0111 ext 225  
F: 1-855-631-0365

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.