

Titanium Grade 5 ELI / Grade 23 (3.7165)

The material Ti6Al4V ELI (Extra Low Interstitial) is a specialized variant of the titanium alloy 3.7165. This alloy is designed for applications that require a particularly low addition of interstitial elements, such as in medical technology for surgical implants. The alloy meets the strict requirements of the ASTM F136 standard with its specific specifications regarding chemical composition and mechanical properties. .

Main characteristics of Ti6Al4V ELI (3.7165):

- Low content of intermediate elements (interstitials) for improved toughness and ductility
- High corrosion resistance and biocompatibility, ideal for medical implants
- Good mechanical properties and fatigue strength

Chemical analysis of Ti Gr 23 (3.7165)

The chemical composition of Ti6Al4V ELI (3.7165) is similar to that of Ti6Al4V (3.7164), but with stricter requirements for the content of interstitials such as hydrogen, oxygen and nitrogen.

Mechanical properties at room temperature

The mechanical properties of titanium 3.7165 are very similar to those of titanium 3.7164, but with a focus on improved toughness and ductility in applications requiring high reliability, such as medical implants.

Tensile strength: Typically higher than for standard Ti6Al4V

Yield strength: Similar or slightly higher than Ti6Al4V

Elongation: Higher than standard Ti6Al4V, indicating better ductility

Modulus of elasticity and necking: Similar to Ti6Al4V

Heat treatment and welding of material 3.7165

The heat treatment processes for Ti6Al4V ELI are designed to ensure optimum toughness and ductility. The specific temperatures and times may vary depending on the requirements of the specific application. Welding Ti6Al4V ELI requires special care and specialized techniques to maintain the purity and mechanical properties of the material.

Please note that the exact chemical compositions, mechanical properties and heat treatment processes may vary depending on the manufacturer and specific application. We recommend contacting the material manufacturer or a qualified engineer directly for the most accurate and up-to-date information.