Titanium alloys

Category:
High stiffness, strength, temperature, wear resistance

Titanium-Boron alloy Ti-SB62

Titanium Ti-SB62 is a newly developed Titanium-Boron alloy. Ti-SB62 is made via conventional wrought processing route. During an In-Situ process TiB (Titanium-Boride) is formed. The TiB phase is responsible for the unique properties of this Titanium-Boron alloy. Because of this process no voids or defects are found like in powder based Titanium alloys.

General properties

- High stiffness at room and elevated temperatures
- High strength at room and elevated temperatures
- Comparable ductility to Ti-6Al-4V
- Good machining behaviour compared to other Titanium-Boron alloys

Comparison with Standard alloy Ti-6Al-4V:

Advantages:
- 20% higher stiffness
- 12-20 higher strength
- Excellent wear resistance

Disadvantages:
- Fair to machine

Chemical Composition: Ti/TiB

Mechanical properties

<table>
<thead>
<tr>
<th>Alloy</th>
<th>UTS</th>
<th>YS</th>
<th>El</th>
<th>E-Modulus</th>
<th>UTS</th>
<th>YS</th>
<th>El</th>
<th>E-Modulus</th>
<th>Fatigue</th>
<th>Residual</th>
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<tbody>
<tr>
<td></td>
<td>Mpa</td>
<td>Mpa</td>
<td>%</td>
<td>Gpa</td>
<td>Mpa</td>
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*After creep exposure at 650°, 160 Mpa, 100h.

Physical data

Hardness: 36-42 HRC
Density: 4.55 g/cm³
CTE: 8.1x10^-6
Thermal conductivity: 7 W/mK

Applications

- Inlet and outlet valves
- Automotive Connecting Rods
- Compressor discs and blades
- Transmission shifts
- Landing gear application

Delivery form

- Bars, Plates, Sheets, Castings, Forgings

Titanium-Boron alloy Ti-SB62

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