Aluminum alloys

Category:
high strength, very high modulus
elevated temperature

Aluminum-alloy Al-TiB-55

Aluminum composite Al-TiB-55 is a ceramic preform based Aluminum composite material. The infiltration of the ceramic, TiB, preform is made via squeeze casting process. The TiB particle size is 8µm. Particle content can be changed from 30-65%. The composite shows high strength, very high stiffness, excellent damping behavior and wear resistance. The Matrix alloy is A2024. Other matrix alloys could be also used.

General properties

- High strength
- Very high elastic modulus
- High fatigue strength

Chemical Composition: A2024+55%TiB

Mechanical properties

<table>
<thead>
<tr>
<th></th>
<th>Density</th>
<th>UTS</th>
<th>Elong.</th>
<th>E-Modulus</th>
<th>CTE</th>
<th>Fracture toughness</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>g/cm³</td>
<td>MPa</td>
<td>%</td>
<td>GPa</td>
<td>ppm</td>
<td>MPa x m1/2</td>
</tr>
<tr>
<td>Al-TiB-55</td>
<td>3.63</td>
<td>623</td>
<td>1.2</td>
<td>208</td>
<td>12</td>
<td>11.3</td>
</tr>
</tbody>
</table>

Applications

- Brake calipers
- Brake Discs
- Structural parts
- Hydraulic Actuators
- Automotive engine parts

Delivery form

- Billets, Castings