TITANIUM DATA SHEET

Service Steel Aerospace (SSA) is one of the largest titanium distributors in the World. SSA stocks titanium mill products for the Aerospace Industry, Oil Field, Biomedical, Racing and other critical application industries. We rely on our vast inventory and mill relationships to offer immediate delivery on all of our mill products. SSA places the highest value on quality, customer service and customer satisfaction.

ALLOYS

<table>
<thead>
<tr>
<th>Titanium Alloy</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>6Al-4V</td>
<td>AMS 4928, AMS 6931, ASTM B-348, AMS 4911, AMS 4965, AMS 6930, AMS 4967, MIL-T-9047, MIL-T-9046, AMS 920, BMS 7-269, ASTM-F-1472, DMS 1583, DMS 1570, DMS 1592</td>
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<tr>
<td>6Al-4V ELI</td>
<td>AMS 4905, AMS 4907, AMS 4930, AMS 4931, AMS 6932, BMS 7-269, ASTM-F-136</td>
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<td>6Al-6V-2Sn</td>
<td>AMS 4971, AMS 4978, AMS 4979, AMS 6935, AMS 6936, AMS 4918</td>
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<tr>
<td>6Al-2Sn-4Zr-2Mo</td>
<td>AMS 4975, AMS 4976, MIL-T-9047, AMS 6905, AMS 4919</td>
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<td>6Al-2Sn-4Zr-6Mo</td>
<td>AMS 4981, AMS 6906, AMS 6907</td>
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<td>8Al-1Mo-1V</td>
<td>AMS 4972, AMS 4973</td>
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<td>10V-2Fe-3Al</td>
<td>AMS 4984, AMS 4986, AMS 4987</td>
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</tbody>
</table>

PRODUCTS

Service Steel Aerospace’s (SSA) extensive inventory of ingot and billet allows SSA to competitively support rolled plate, rounds, forged rounds, and open-die custom “on size” block forgings at less than mill lead time and no mill minimums. SSA also offers value added processing such as heat treating, trepanning, water jet cutting, sonic inspection and mechanical testing.

QUALITY/OEM APPROVALS

Service Steel Aerospace (SSA) is ISO 9001 and AS9100 certified and operates under a quality system that is approved by leading manufacturers such as Boeing, Northrop-Grumman, Lockheed-Martin, Goodrich, Baker Hughes, Halliburton, Bombardier, as well as many others. SSA’s commitment to quality ensure our customers receive the right product every time.
TECHNICAL DATA SHEET

GENERAL CHARACTERISTICS
Titanium's unique combination of physical, mechanical and corrosion resistant properties makes it an ideal material for many different applications. Titanium's high strength to weight ratios makes titanium the prime choice for high strength, lightweight applications.

CHEMISTRY - MOST COMMON ALLOYS

<table>
<thead>
<tr>
<th>Element</th>
<th>6Al-4V (min)</th>
<th>6Al-4V ELI (min)</th>
<th>6Al-2Sn-4Zr-2Mo (min)</th>
<th>6Al-2Sn-4Zr-6Mo (min)</th>
<th>6Al-6V-2Sn (min)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>5.50</td>
<td>5.50</td>
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<td>5.50</td>
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<tr>
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PHYSICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>6Al-4V</th>
<th>6Al-4V ELI</th>
<th>6Al-6V-2Sn</th>
<th>6Al-2Sn-4Zr-2Mo</th>
<th>6Al-2Sn-4Zr-6Mo</th>
</tr>
</thead>
<tbody>
<tr>
<td>density (lbs/in3)</td>
<td>0.163</td>
<td>0.163</td>
<td>0.164</td>
<td>0.164</td>
<td>0.168</td>
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<tr>
<td>Tensile (ksi)</td>
<td>130</td>
<td>120</td>
<td>145</td>
<td>130</td>
<td>165</td>
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<tr>
<td>Yield (ksi)</td>
<td>120</td>
<td>110</td>
<td>135 to 160</td>
<td>120</td>
<td>155</td>
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<tr>
<td>Elong %</td>
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<td>8</td>
<td>8</td>
<td>10</td>
<td>6</td>
</tr>
<tr>
<td>RofA</td>
<td>20</td>
<td>15</td>
<td>15</td>
<td>25</td>
<td>12</td>
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</tbody>
</table>

WEIGHT FORMULAS

(Bar weights based on: steel, .2833 lb. per cubic in/titanium, .1600 per cubic in/nickel alloy .2970 lb. per cubic in.)

ROUNDS

Steel:
Lbs. per linear foot = D x 2.669
Lbs. per linear inch = D x .2224
Titanium:
Lbs. per linear foot = D x 1.507
Lbs. per linear inch = D x .1256
Nickel Alloy:
Lbs. per linear foot = D x 2.798
Lbs. per linear inch = D x .2331

FLATS

Steel:
Lbs. per linear foot = T x W x 3.40
Lbs. per linear inch = T x W x .2833
Titanium:
Lbs. per linear foot = T x W x 1.92
Lbs. per linear inch = T x W x .16
Nickel Alloy:
Lbs. per linear foot = T x W x 3.564
Lbs. per linear inch = T x W x .2970

SQUARES

Steel:
Lbs. per linear foot = T x 3.60
Lbs. per linear inch = T x .2833
Titanium:
Lbs. per linear foot = T x 1.92
Lbs. per linear inch = T x .16
Nickel Alloy:
Lbs. per linear foot = T x 3.564
Lbs. per linear inch = T x .2970

CIRCLES

Steel:
Wt. of Circle in lbs. = D^2 x T x 2224
Titanium:
Wt. of Circle in lbs. = D^2 x T x .1256
Nickel Alloy:
Wt. of Circle in lbs. = D^2 x T x .2331