



**Tricor Metals  
Ohio Division**  
3225 W. Old Lincoln Way  
Wooster, Ohio 44691  
Phone: 330-264-3299  
Fax: 330-264-1181

**Tricor Metals  
Texas Division**  
101 S. Trade Center Parkway  
Conroe, Texas 77385  
Phone: 1-936-273-2661  
Fax: 936-273-2669

**Tricor Metals  
Michigan Division**  
44696 Helm St.  
Plymouth, MI 48170  
Phone: 734-454-3485  
Fax: 734-454-7110

**Tricor Alloys  
California Division**  
1701 Solar Dr., Suite 225  
Oxnard, CA 93030  
Phone 805-485-5855  
Fax: 805-988-0111

[www.tricormetals.com](http://www.tricormetals.com) [www.tricoralloys.com](http://www.tricoralloys.com)

Table of Mechanical Properties (ASTM) for Titanium Bar & Billet						
	Tensile Strength, min		Yield Strength (0.2%Offset) min or range		Elongation in 4D	Reduction of Area
Grade	ksi	Mpa	ksi	Mpa	min.%	min.%
1	35	240	20	138	24	30
2	50	345	40	275	20	30
2H	58	400	40	275	20	30
3	65	450	55	380	18	30
4	80	550	70	483	15	25
5	130	895	120	828	10	25
6	120	828	115	795	10	25
7	50	345	40	275	20	30
7H	58	400	40	275	20	30
9	90	620	70	483	15	25
9 <sup>i</sup>	90	620	70	483	12	25
11	35	240	20	138	24	30
12	70	483	50	345	18	25
13	40	275	25	170	24	30
14	60	410	40	275	20	30
15	70	483	55	380	18	25
16	50	345	40	275	20	30
16H	58	400	40	275	20	30
17	35	240	25	170	24	30
18	90	620	70	483	15	25
18 <sup>i</sup>	90	620	70	483	12	20
19 <sup>ii</sup>	115	793	110	759	15	25
19 <sup>iii</sup>	135	930	130 to 159	897 to 1096	10	20
19E	165	1138	160 to 185	1104 to 1276	5	20
20 <sup>ii</sup>	115	793	110	759	15	25
20 <sup>iii</sup>	135	930	130 to 159	897 to 1096	10	20
20 <sup>iv</sup>	165	1138	160 to 185	1104 to 1276	5	20
21 <sup>ii</sup>	115	793	110	759	15	35
21 <sup>iii</sup>	140	966	130 to 159	897 to 1096	10	30
21 <sup>iv</sup>	170	1172	160 to 185	1104 to 1276	8	20
23	120	828	110	759	10	15
23 <sup>i</sup>	120	828	110	759	7.5 <sup>v</sup> , 6.0 <sup>vi</sup>	25
24	130	895	120	828	10	25
25	130	895	120	828	10	25
26	50	345	40	275	20	30
27	35	240	25	170	24	30
28	90	620	70	483	15	25
28 <sup>i</sup>	90	620	70	483	12	20
29	120	828	110	759	10	25
29 <sup>i</sup>	120	828	110	759	7.5 <sup>v</sup> , 6.0 <sup>vi</sup>	15
30	50	345	40	275	20	30

While this information has been compiled with care, it is for convenience and for reference only and we assume no liability for any decisions based on the content therein. It shall be your responsibility to ensure that any information in this document or on our website meets your specific requirements



**Tricor Metals  
Ohio Division**  
3225 W. Old Lincoln Way  
Wooster, Ohio 44691  
Phone: 330-264-3299  
Fax: 330-264-1181

**Tricor Metals  
Texas Division**  
101 S. Trade Center Parkway  
Conroe, Texas 77385  
Phone: 1-936-273-2661  
Fax: 936-273-2669

**Tricor Metals  
Michigan Division**  
44696 Helm St.  
Plymouth, MI 48170  
Phone: 734-454-3485  
Fax: 734-454-7110

**Tricor Alloys  
California Division**  
1701 Solar Dr., Suite 225  
Oxnard, CA 93030  
Phone 805-485-5855  
Fax: 805-988-0111

[www.tricormetals.com](http://www.tricormetals.com) [www.tricoralloys.com](http://www.tricoralloys.com)

<b>Table of Mechanical Properties (ASTM) for Titanium Bar &amp; Billet</b>						
	<b>Tensile Strength, min</b>		<b>Yield Strength (0.2%Offset) min or range</b>		<b>Elongation in 4D</b>	<b>Reduction of Area</b>
<b>Grade</b>	<b>ksi</b>	<b>Mpa</b>	<b>ksi</b>	<b>Mpa</b>	<b>min.%</b>	<b>min.%</b>
31	65	450	55	380	18	30
32	100	689	85	586	10	25
33	50	345	40	275	20	30
34	65	450	55	380	18	30
35	130	895	120	828	5	20
36	65	450	60 to 95	410 to 655	10	
37	50	345	31	215	20	30
38	130	895	115	794	10	25

Above properties apply to longitudinal sections up to 3 inch thickness with maximum of 10 inch. Mechanical properties of larger sections shall be negotiated between the manufacturer and purchaser.

- i) Properties for material in transformed-beta condition.
- ii) Properties for solution treated condition.
- iii) Properties for solution treated and aged condition-Moderate strength (determined by aging temperature).
- iv) Properties for solution treated and aged condition-High strength (determined by aging temperature).
- v) For product section or wall thickness values < 1.0 in.
- vi) For product section or wall thickness values > 1.0 in.

*While this information has been compiled with care, it is for convenience and for reference only and we assume no liability for any decisions based on the content therein. It shall be your responsibility to ensure that any information in this document or on our website meets your specific requirements*