

# Metals Data

AISI TYPE NUMBER OR NAME		200/300	201	201 1/4 Hard	301	304	316	
<b>SPECIFICATION</b>	UNS Designation	-	S20100	S20100	S30100	S30400	S31600	
	ASTM	-	A-666	A-666	A-666	A-666	A-666	
<b>Principal Alloying Elements, %</b>		-	C 0.15 Max.	C 0.03 Max.	C 0.15 Max.	C 0.08 Max.	C 0.08 Max.	
		-	Mn 5.50 - 7.50	Mn 5.50 - 7.50	Mn 2.00 Max.	Mn 2.00 Max.	Mn 2.00 Max.	
		-	Si .75 Max.	Si 1.00 Max.	Si 1.00 Max.	Si 1.00 Max.	Si .75 Max.	
		-	Cr 16.00 -18.00	Cr 16.00 -18.00	Cr 16.00 -18.00	Cr 18.00 -20.00	Cr 16.00 -18.00	
		-	Ni 3.50 - 5.50	Ni 3.50 - 5.50	Ni 6.00 - 8.00	Ni 8.00 - 10.50	Ni 10.00 -14.00	
		-	N 0.25 Max	N 0.25 Max			Mo 2.00 - 3.00	
<b>PHYSICAL PROPERTIES</b>								
Density, Lb/Cu. In.		0.28	0.28	0.28	0.29	0.29	0.29	
Mod. of Elasticity in Tension x 10 <sup>6</sup> PSI		28.0	28.6	28.6	28.0	29.0	28.0	
Structure		Austenitic	Austenitic	Austenitic	Austenitic	Austenitic	Austenitic	
Mean Coefficient of Thermal Expansion per °F. x 10 <sup>-6</sup>	32 - 212°F	9.0	8.7	9.0	9.4	9.4	8.9	
	32 - 600°F	9.70	9.70	10.00	9.50	9.6	9.00	
	32 - 1000°F	10.20	10.20	10.50	10.10	10.20	9.70	
	32 - 1200°F	10.40	10.50	-	10.40	10.40	10.30	
Melting Range		2550 - 2650°F	2550 - 2650°F	2550 - 2650°F	2550 - 2590°F	2550 - 2590°F	2540 - 2630°F	
<b>ELECTRICAL PROPERTIES</b>								
Magnetic Permeability, Annealed		Non-Magnetic	Non-Magnetic	Non-Magnetic	Non-Magnetic	Non-Magnetic	Non-Magnetic	
Elec. Resistivity, Microhm-cm, 70°F		70.00	69.00	69.00	72.00	70.00	74.00	
<b>MECHANICAL PROPERTIES</b>								
Rockwell Hardness		70 - 95R <sub>B</sub>	90 - 95R <sub>B</sub>	20 - 30R <sub>C</sub>	75 - 95R <sub>B</sub>	70 - 90R <sub>B</sub>	70 - 85R <sub>B</sub>	
Ultimate Tensile Strength, BAND-IT Min. Spec. (PSI), Typical (PSI)		75,000 80,000	100,000 115,000	120,000 135,000	100,000 105,000	75,000 80,000	80,000 90,000	
Yield Strength, BAND-IT Min. Spec. (PSI) Typical (PSI)		30,000 45,000	45,000 60,000	85,000 90,000	45,000 55,000	30,000 45,000	35,000 50,000	
Elongation in 2 inches, BAND-IT Min. Spec. (%), Typical (%)		30 45	40 55	40 45	40 50	30 45	35 45	
Tensile Strength at Elevated Temps., Short Time Tests, (PSI)		1300°F 1500°F 1700°F	36,000 22,000 11,000	37,500 23,000 11,000	37,500 23,000 11,000	35,500 22,500 11,000	36,000 22,000 13,500	48,000 28,000 18,000
<b>CORROSION RESISTANCE</b>								
Mild Atmospheric and Fresh Water		Good	Good	Good	Good	Very Good	Excellent	
Industrial Atmosphere		Good	Good	Good	Good	Very Good	Very Good	
Marine Atmosphere		Fair	Fair	Fair	Fair	Good	Very Good	
Salt Water		No	No	No	No	No	Good	
Mild Chemical		Fair	Fair	Fair	Fair	Good	Good	
Oxidizing Chemical		Fair	Fair	Fair	Fair	Good	Good	
Reducing Chemical		No	No	No	No	No	Good	
<b>USE</b>	General	Municipal, Strapping, Construction	Municipal, Construction, Automotive,	Construction, Automotive, Municipal	Construction, Automotive	Chemical, Food, Dairy, Hospitals, Power Generator	Marine, Chemical, Food, Petroleum, Paper, Textile, Medical	
	BAND-IT	Valustrap, Valuclips, Sign Band, Brackets, BAND-IT Tie	Junior SID Clamps, Band, Buckle, BAND-FAST, Tie Strips, Band-Lok Tie 1/4 Ultra-Lok Ties	Center Punch Clamps, Ultra-Lok Band and Clamps	Scru-Seal Housing & Base, Worm Gear, Clamps, Buckles	304 Strap, Tie-Dex Band, Tie-Lok Ties, Ball-Lok Ties, Self-Lok Ties,	Multi-Lok, Tie-Lok, Ball-Lok, Self-Lok Ties, Junior SID Clamps, Nipples, Tri-Lokts, 316 Band/Buckle, All Purpose Band, Easy Read	

All values in table are reference only.

# Metals Data

AISI TYPE NUMBER OR NAME	317L 1/4 Hard	409	430	Monel® 400	Inconel® 625	AL6XN®	Titanium GR1	GCS	
<b>SPECIFICATION</b> UNS Designation	S31703	S40900	S43000	N04400	N06625	N08367	R50250	-	
ASTM	A-240	A-240	A-240	B127, B164-61	B443	B688	B265	-	
<b>Principal Alloying Elements, %</b>	C 0.030 Max. Mn 2.00 Max. Si .75 Max. Cr 18.00 - 20.00 Ni 11.00 - 15.00 P 0.045 Max. S 0.03 Max. Mo 3.00-4.00	C 0.08 Max. Mn 1.00 Max. Si 1.00 Max. Cr 10.50 - 11.75 Ni 0.050 P 0.045 Max. S 0.03 Max.	C 0.12 Max. Mn 1.00 Max. Si 1.00 Max. Cr 16.00 -18.00 P 0.04 Max. S 0.03 Max.	C 0.03 Max. Mn 1.25 Max. Si 0.50 Max. Ni 63.00 -70.00 Cu 31.5 Fe 1.25 Max. S 0.024 Max.	C 0.15 Max. Mn .05 Max. Cr 20.0-23.0 Ni Balance Mo 8.0 - 10.0 Ti 0.4 Max. Fe 2.5 Max. Al 0.4 Max.	C .030 Max. N 2.0 Max. P .040 Max. S .030 Max. Si 1.0 Max. Ni 23.5 - 25.5 Cr 20.0 - 22.0 Mo 6.0 -7.0 Cu .75 Max. N .18 -.25	C 0.10 Max. Mn 0.03 Max. H 0.015 Max. O 0.18 Max. Fe 2.5 Max. Ti Balance		
<b>PHYSICAL PROPERTIES</b>									
Density, Lb/Cu. In.	0.29	0.28	0.278	0.319	0.305	0.291	0.163	0.283	
Mod. of Elasticity in Tension x 10 <sup>6</sup> PSI	29.0	30.2	29.0	26.0	30.0	28.3	15.0	30.0	
Structure	Austenitic	Ferritic	Ferritic	-	-	Austenitic	Alpha	Ferritic	
Mean Coefficient of Thermal Expansion per °F. x 10 <sup>-6</sup>	32 - 212°F: 8.9 32 - 600°F: 9.0 32 - 1000°F: 9.70 32 - 1200°F: 10.30	5.8 6.12 6.60 6.86	5.8 6.10 6.30 6.60	7.7 8.80 9.10 9.30	7.4 - - -	8.5 8.8 9.1 9.5	4.6 5.30 5.50 5.70	6.3 7.30 7.90 8.20	
Melting Range	2500 - 2550°F	2500 - 2550°F	2500 - 2550°F	2500 - 2550°F	2500 - 2550°F	2500 - 2550°F	2500 - 2550°F	-	
<b>ELECTRICAL PROPERTIES</b>	Non-Magnetic	-	Magnetic	-	Non-Magnetic	-	Non-Magnetic	Magnetic	
Magnetic Permeability, Annealed	μ = 1.008	-	μ = 600-1100	-	μ = 1.006	μ = 1.0028	μ = 1.00005	1500-2000	
Elec. Resistivity, Microhm-cm, 70°F	74.00	60.00	60.00	5.10	12.90	89.0	4.20	17.20	
<b>MECHANICAL PROPERTIES</b>									
Rockwell Hardness	70 - 85R <sub>B</sub>	88R <sub>B</sub> Max	75 - 90R <sub>B</sub>	60 - 80R <sub>B</sub>	88 - 94R <sub>B</sub>	80 - 95R <sub>B</sub>	64 - 70R <sub>B</sub>	80 - 95R <sub>B</sub>	
Ultimate, Tensile Strength	115,000	55,000	55,000	70,000	120,000	95,000	-	84,000	
BAND-IT Min. Spec. (PSI), Typical (PSI)	120,000	68,000	75,000	75,000	130,000	110,000	46,000	90,000	
Yield Strength,	75,000	25,000	40,000	32,000	60,000	45,000	25,000	80,000	
BAND-IT® Min. Spec. (PSI), Typical (PSI)	80,000	35,000	55,000	40,000	75,000	55,000	31,000	85,000	
Elongation in 2 inches,	10	20	20	30	30	30	24	5	
BAND-IT® Min. Spec. (%), Typical (%)	15	33	25	40	40	45	30	8	
Tensile Strength at Elevated Temps., Short Time Tests, (PSI)	1300°F: 48,000 1500°F: 28,000 1700°F: 18,000	5,000 1,500 -	15,000 8,000 5,000	- - -	- - -	- - -	- - -	- - -	
<b>CORROSION RESISTANCE</b>									
Mild Atmospheric and Fresh Water	Excellent	Good	Good	Good	Good	Good	Good	Good/Fair	
Industrial Atmosphere	Very Good	Good	Good	Good	Good	Good	Good	Fair	
Marine Atmosphere	Very Good	Poor	Poor	Excellent	Excellent	Excellent	Good	Poor	
Salt Water	Good	No	No	Excellent	Excellent	Excellent	Good	No	
Mild Chemical	Very Good	Fair	Fair	Good	Good	Good	Good	No	
Oxidizing Chemical	Good	Fair	Fair	Good	Good	Good	*	No	
Reducing Chemical	Good	Good	No	Good	Good	Good		No	
<b>USE</b>									
General	Pulp/Paper, Chemical, Marine	Auto Agriculture	Interior Architecture, Automotive Trim	Electronics, Marine, Chemical, Petroleum	Chemical, Nuclear, Aerospace, Marine	Chemical, Nuclear, Aerospace, Marine	Corrosive Service Good for Machinery Weldable	Indoor, Mild Atmosphere	
BAND-IT®	317L Band for Paper Mills, Special Applications	Auto	Automotive, Universal Clamp	Band/Buckle	Band/Buckle, Preformed Clamps	Special	Band/Buckle	Band/Buckle Preformed Clamps	

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