



Toll Free: 866-822-7758 Fax: 610-430-3588

Chemical and Mechanical Properties

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Chemistry	Material		Typical Mechanical Properties				
			As Worked Condition			Heat Treated Condition	
			Yield K.S.I.	Tensile K.S.II	Elongation	Yield K.S.II	Tensile K.S.I.
Aluminum Alloy 2024-T4	Cr	0.10	11	27	22%	40	55
	Mn	0.30/0.90					
	Si	0.50					
	Cu	3.80/4.90					
	Fe	0.50					
	Mg	1.20/1.80					
	Zn	0.250					
	Al	Balance					
Aluminum Alloy 6061-T6	Cr	0.20			10%	35	42
	Mg	1.0					
	Si	0.60					
	Cu	0.27					
	Al	Balance					
Aluminum Alloy 6262-T9	Cr	0.90			5%	46	56
	Mg	1.0					
	Si	0.60					
	Cu	0.27					
	Al	Balance					



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			Yield K.S.I.	Tensile K.S.II	Elongation	Yield K.S.II	Tensile K.S.I.
Aluminum Alloy 7075-T73	Cr	0.20	33	15	16%	66	77
	Mg	2.50					
	Cu	0.06					
	Cr	0.30					
	Zn	5.60					
	Al	Balance					
Brass Alloy 268	Cu	64.00/68.00		57	20%		
	Fe	0.05					
	Pb	0.15					
	Zn	Balance					
Brass Alloy 353	Cu	59.00/64.50	55/65	57/74	35%		
	Fe	0.10					
	Pb	1.30/2.30					
	Zn	Balance					
Brass Alloy 360	Cu	60.00/63.00	25	57	10%		
	Fe	0.35					
	Pb	2.50/3.70					
	Zn	Balance					
Naval Brass Alloy 464	Cu	59.00/62.00	27	60	25%		
	Fe	0.18					
	Sn	0.50/1.00					
	Pb	0.20					
	Zn	Balance					



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			Yield K.S.I.	Tensile K.S.II	Elongation	Yield K.S.II	Tensile K.S.I.
Copper Alloy 110	Cu	99.9	44	48	16%		
	Oxygen and						
	trace						
	elements						
	may vary						
	depending						
	on						
	the process						



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			Yield K.S.I.	Tensile K.S.II	Elongation	Yield K.S.II	Tensile K.S.I.
Hastelloy Alloy B	Mo	28.00	57	121	52%		
	Fe	5.00					
	V	0.30					
	Ni	Balance					
Hastelloy Alloy C276	Mo	16.00	58	121	47%		
	Cr	15.50					
	Fe	5.50					
	Co	1.20					
	W	3.80					
	Ni	Balance					
Inconel Alloy 600	Ni	76.00	80/125	105/150	30% / 10%		
	Cr	15.50					
	Fe	8.00					
Inconel Alloy 625	Ni	61.00	60/95	120/150	60% / 30%		
	Cr	21.50					
	Fe	2.50					
	Mo	9.00					



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			Yield K.S.I.	Tensile K.S.II	Elongation	Yield K.S.II	Tensile K.S.I.
	Mo	9.00					
Inconel Alloy X 750	Ni	73.00	50	120	20%		
	Cr	15.50					
	Fe	7.00					
	Ti	2.50					
	Al	.070					
	Nb	1.00					
Incoloy Alloy 800	Ni	32.50	30/60	75/100	60% / 30%		
	Cr	21.00					
	Fe	46.00					
	C	0.05					
Monel Alloy 400	Ni	66.50	40	80	20%		
	Fe	1.20					
	Cu	31.50					
	Mn	1.10					
Monel Alloy 405	Ni	66.50	50	85	15%		
	Fe	1.20					
	Cu	31.50					
	Mn	1.10					
	S	.04					



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			Yield K.S.I.	Tensile K.S.I.	Elongation	Yield K.S.I.	Tensile K.S.I.
Monel Alloy K 500	Ni	65.50	60	105	30%	90	130
	Fe	1.00					
	Cu	29.50					
	Ti	0.60					
	Al	2.70					
Silicon Bronze Alloy 651	Cu	96.00	45	75	8%		
	Fe	0.80					
	Zn	1.50					
	Pb	0.05					
Silicon Bronze Alloy 655	Cu	94.80	38	70	15%		
	Fe	0.80					
	Zn	1.50					
	Pb	0.05					



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			Yield K.S.I.	Tensile K.S.II	Elongation	Yield K.S.II	Tensile K.S.I.
Stainless Steel Alloy 20	C	.07	40	85	30%		
	Mn	2.00					
	P	.045					
	S	.035					
	Si	1.00					
	Ni	32.00/38.00					
	Cb + Ta	8 X C Mim. - 1.0 Max					
Stainless Steel 302 HQ	C (max)	0.15	35	85	60%		
	Mn (max)	2.00					
	Si (max)	1.00					
	Cr	17.00 / 19.00					
	Ni	8.00 / 10.00					
	Cu						
Stainless Steel 303	C (max)	.15	35	90	50%		
	Mn (max)	2.00					
	Si (max)	1.00					
	Cr	17.00 / 19.00					
	S (max)	0.15					
	Mo (max)	0.60					
	Ni	8.00 / 10.00					



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			Yield K.S.I.	Tensile K.S.II	Elongation	Yield K.S.II	Tensile K.S.I.
Stainless Steel 304	C (max)	0.03	30	75	60%		
	Mn (max)	2.00					
	Si (max)	1.00					
	Cr	18.00 / 20.00					
	Ni	8.00 / 12.00					
Stainless Steel 304L	C (max)	0.03	30	75	60%		
	Mn (max)	2.00					
	Si (max)	1.00					
	Cr	18.00 / 20.00					
	Ni	8.00 / 12.00					
Stainless Steel 309	C (max)	0.20	40	90	50%		
	Mn (max)	2.00					
	Si (max)	1.00					
	Cr	22.00 / 24.00					
	Ni	12.00 / 15.00					



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			Yield K.S.I.	Tensile K.S.II	Elongation	Yield K.S.II	Tensile K.S.I.
Stainless Steel 310	C (max)	0.25	40	90	47%		
	Mn (max)	2.00					
	Si (max)	1.50					
	Cr	24.00 / 26.00					
	Ni	19.00 / 22.00					
Stainless Steel 316	C (max)	0.08	30	75	60%		
	Mn (max)	2.00					
	Si (max)	1.00					
	Cr	16.00 / 18.00					
	Ni	10.00 / 14.00					
	Mo	2.00 / 3.00					



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			Yield K.S.I.	Tensile K.S.II	Elongation	Yield K.S.II	Tensile K.S.I.
Stainless Steel 316L	C (Max)	0.03	30	75	60%		
	Mn (Max)	2.00					
	Si (Max)	1.00					
	Cr	16.00/18.00					
	Ni	10.00/14.00					
	Mo	2.00 / 3.00					
Stainless Steel 317L	C (max)	0.03	30	75	30%		
	Mn (max)	2.00					
	Si (max)	1.00					
	Cr	18.00 / 20.00					
	Ni	11.00 / 15.00					
	Mo	3.00 / 4.00					
Stainless Steel 321	C (max)	0.08	35	85	60%		
	Mn (max)	2.00					
	Si (max)	1.00					
	Cr	17.00 / 19.00					
	Ni	9.00 / 12.00					
	Ti (mim)	5 X C					



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			Yield K.S.I.	Tensile K.S.II	Elongation	Yield K.S.II	Tensile K.S.I.
Stainless Steel 347	C (max)	0.08	35	90	50%		
	Mn (max)	2.00					
	Si (max)	1.00					
	Cr	17.00 / 19.00					
	Ni	9.00 / 13.00					
	Cb + Ta	10 X C	40	70	22%	95	140
Stainless Steel 410	C (max)	0.15					
	Mn (max)	1.00					
	Si (max)	1.00					
	Cr	11.50 / 13.50					
Stainless Steel 416	C (max)	0.15	40	70	22%	90	120
	Mn (max)	1.25					
	Si (max)	1.00					
	Cr	12.00 / 14.00					
	Mo	0.60					



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Stainless Steel 430	C	0.12	40	70	22%		
	Mn (max)	1.00					
	Si (max)	1.00					
	Cr	14.00 / 18.00					
	P	0.04					
	S	0.03					
Stainless Steel 431	C	0.20	90	115	15%	120	150
	Mn (max)	1.00					
	Si (max)	1.00					
	Cr	15.00 / 17.00					
	Ni	1.25 / 2.50					
	P	0.04					
	S	0.03					



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Stainless Steel 501	C (min)	0.10	25	60	30%		
	Mn (max)	1.00					
	Si (max)	1.00					
	Cr	4.00/6.00					
	Mo	0.40/0.65					
Stainless Steel 17-4 PH AISI 630	Cr	15.50 / 17.50	120	150	20%	170	190
	Ni	3.00 / 5.00					
	C	0.07					
	Mn (max)	1.00					
	Si (max)	1.00					
	Cu	3.00 / 5.00					
	P	0.04					
	S	0.03					
	Cb + Ta	5 X C -.45					



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Stainless Steel A 286 AISI 660	Cr	13.50 / 16.00	50	120	40%	85	130
	Ni	24.00 / 27.00					
	C	0.08					
	Mn	1.00 / 2.00					
	Si	0.40 / 1.00					
	Mo	1.00 / 1.50					
	P	0.04					
	S	0.03					
	Ti	1.90 / 2.30					
	B	0.001 / 0.01					
	Al	0.35					
	V	0.10 / 0.50					
Titanium Grade 2	Ti (min)	99.00	42	62	28%		
	H (max)	0.0125					
	N (max)	0.050					
	O (max)	0.20					
	C (max)	0.10					
	Fe (max)	0.20					