

COPPER ALLOYS

<u>UNS Number</u>	<u>Type</u>	<u>Cu</u>	<u>Pb</u>	<u>Fe</u>	<u>Sn</u>	<u>Zn</u>	<u>P</u>	<u>Mn</u>	<u>Si</u>	<u>Ni(Incl Co)</u>	<u>Other Elements</u>
C16200	Cadmium Copper	Rem.		0.02							0.7-1.2 Cd
C18900	High Copper Alloy	Rem.	0.02		0.6-0.9	0.100	0.05	0.1-0.3	0.15-0.40		Al 0.01

BRASSES

C22000	Commercial Bronze, 90%	89.0-91.0	0.05	0.05		Rem.					
C22600	Jewelry Bronze, 87-1/2%	86.0-89.0	0.05	0.05		Rem.					
C23000	Red Brass, 85%	84.0-86.0	0.05	0.05		Rem.					
C24000	Low Brass, 80%	78.5-81.5	0.05	0.05		Rem.					
C26000	Cartridge Brass, 70%	68.5-71.5	0.07	0.05		Rem.					
C27000	Yellow Brass, 65%	63.0-68.5	0.10	0.07		Rem.					

COPPER-ZINC-TIN ALLOYS

C41100	Tin Brass	89.0-92.0	0.10	0.05	0.3-0.7	Rem.					
C43600	Tin Brass	80.0-83.0	0.05	0.05	0.2-0.5	Rem.					

PHOSPHOR BRONZES

C50700	Phosphor Bronze	Rem.	0.05	0.10	1.5-2.0		0.03				
C50900	Phosphor Bronze	Rem.	0.05	0.10	2.5-3.8	0.300	0.03-.30				
C51000	Phosphor bronze, 5%A	Rem.	0.05	0.10	4.2-5.8	0.300	0.03-.35				
C52100	Phosphor bronze, 8%C	Rem.	0.05	0.10	7.0-9.0	0.200	0.03-.35				

SILICON BRONZES

C65100	Low Silicon Bronze B	Rem.	0.05	0.80		1.500		0.7	0.8-2.0		
C65500	High Silicon Bronze A	Rem.	0.05	0.80		1.500		0.50-1.3	2.8-3.8	0.6	
C65600	Silicon Bronze	Rem.	0.02	0.50	1.50	1.500		1.5	2.8-4.0		Al 0.01

COPPER-NICKEL ALLOYS

C71000	Copper-Nickel 20%	Rem.	0.05	1.00		1.000		1.00		19.0-23.0	
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NICKEL-SILVER ALLOYS

C74500	Nickel-Silver, 65-10	63.5-66.5	0.10	0.25		Rem.		0.5		9.0-11.0	
C75700	Nickel-Silver, 65-12	63.5-66.5	0.05	0.25		Rem.		0.5		11.0-13.0	

STAINLESS AND HEAT RESISTING STEELS

<u>UNS Number</u>	<u>Type</u>	<u>C</u>	<u>Mn</u>	<u>P</u>	<u>S</u>	<u>Si</u>	<u>Cr</u>	<u>Ni</u>	<u>Mo</u>	<u>Other Elements</u>
S30200	302	0.15	2.00	0.045	0.03	1.000	17.00/19.00	8.00/10.00		
S30430	302HQ	0.08	2.00	0.045	0.03	1.000	17.00-19.00	8.00-10.00		Cu 3.00-4.00
S30300	303	0.15	2.00	0.20	0.15 min	1.000	17.00/19.00	8.00/10.00	0.06	
S30400	304	0.08	2.00	0.045	0.03	1.000	18.00/20.00	8.00/10.50		
S30403	304L	0.03	2.00	0.045	0.03	1.000	18.00/20.00	8.00/10.50		
S30500	305	0.12	2.00	0.045	0.03	1.000	17.00/19.00	10.50/13.00		
S31000	310	0.25	2.00	0.045	0.03	1.500	24.00/26.00	19.00/22.00		
S31400	314	0.25	2.00	0.045	0.03	1.5/3.00	23.00/26.00	19.00/22.00		
S31600	316	0.08	2.00	0.045	0.03	1.000	16.00/18.00	10.00/14.00	2.00/3.00	
S31603	316L	0.03	2.00	0.045	0.03	1.000	16.00/18.00	10.00/14.00	2.00/3.00	
S31703	317L	0.03	2.00	0.045	0.03	1.000	18.00/20.00	11.00/15.00	3.00/4.00	
S32100	321	0.08	2.00	0.045	0.03	1.000	17.00/19.00	9.00/12.00		Ti 5xC Min.
N08330	330	0.08	2.00	0.03	0.03	0.75-1.50	17.0-20.0	34.0-37.0		Cu 1.0; Sn 0.025; Fe 0.005
S34700	347	0.08	2.00	0.045	0.03	1.000	17.00/19.00	9.00/13.00		Cb+Ta 10xC Min
S41000	410	0.15	1.00	0.04	0.03	1.000	11.50-13.50			
S41003	410L	0.03	1.50	0.04	0.03	1.000	10.5-12.5	1.5		
S43000	430	0.12	1.00	0.04	0.03	1.000	16.00-18.00			
S43400	434	0.12	1.00	0.04	0.03	1.000	16.00-18.00		0.75-1.25	

HIGH NICKEL ALLOYS

<u>UNS Number</u>	<u>Type</u>	<u>Ni</u>	<u>C</u>	<u>Mn</u>	<u>Fe</u>	<u>Si</u>	<u>Cu</u>	<u>Cr</u>	<u>Al</u>	<u>Ti</u>	<u>Cb</u>	<u>Other Elements</u>
K93601	Invar®, Alloy 36	35.00/37.00	0.10	0.50	Rem.	0.45		0.50				P .025, S .025, Mo 0.50, Co 0.50
N02200	Nickel 200	99.00	0.15	0.35	0.40	0.350	0.25					S 0.01
N02201	Nickel 201	99.00	0.02	0.35	0.40	0.350	0.25					S 0.01
N04400	Monel 400	63.0-67.0	0.30	2.00	2.50	0.500	Rem.					S 0.024
N06003	Nichrome®, 80/20 C	Rem.	0.15	2.50	1.00	0.75/1.6		19.00/21.00				S 0.01
N06004	Nichrome®, 60/15 B	57 Min	0.15	1.00	Rem.	0.75/1.6		14.0/18.0				S 0.01 max
N06600	Inconel® 600 R	72.00	0.15	1.00	6.0-10.0	0.500	0.5	14.0-17.0				S 0.015
N06601	Inconel® 601	58.00-63.0	0.10	1.00	Rem.	0.500	1.0	21.0-25.0	1.0-1.7			S 0.015
N06625	Inconel® 625	Rem.	0.10	0.50	5.00	0.015		20.0-23.0	0.4	0.4	3.15-4.15	S 0.015; Mo 8.0-10.0; P 0.015
N08800	Incoloy® 800	30.0-35.0	0.10	1.50	Rem.	1.000	0.75	19.0-23.0	0.15-0.60			S 0.015
N10276	Hastelloy® C276	Rem.	0.02	1.00	4.00/7.00	0.080		14.50/16.50				Mo 15.00/17.00, W 3.0/4.5, Co 2.5, V 0.35, P 0.03; S 0.03

B 316/B 316M – 02

TABLE 1 Chemical Composition Limits A,B,C

<u>Alloy</u>	<u>Silicon</u>	<u>Iron</u>	<u>Copper</u>	<u>Manganese</u>	<u>Magnesium</u>	<u>Chromium</u>	<u>Zinc</u>	<u>Titanium</u>	<u>Other Elements D</u>		<u>Aluminum</u>
									<u>Each</u>	<u>Total E</u>	
1100	0.95 Si + Fe		0.05-0.20	0.05	0.10	...	0.05	0.15	99.00 min F
2017	0.20-0.8	0.7	3.5-4.5	0.40-1.0	0.40-0.8	0.10	0.25	0.15	0.05	0.15	remainder
2024	0.50	0.50	3.8-4.9	0.30-0.9	1.2-1.8	0.10	0.25	0.15	0.05	0.15	remainder
2117	0.8	0.7	2.2-3.0	0.20	0.20-0.50	0.10	0.25	...	0.05	0.15	remainder
2219	0.20	0.30	5.8-6.8	0.20-0.40	0.02	...	0.10	0.02-0.10	0.05G	0.15G	remainder
3003	0.6	0.7	0.05-0.20	1.0-1.5	0.10	...	0.05	0.15	remainder
5005	0.30	0.7	0.20	0.20	0.50-1.1	0.10	0.25	...	0.05	0.15	remainder
5052	0.25	0.40	0.10	0.10	2.2-2.8	0.15-0.35	0.10	...	0.05	0.15	remainder
5056	0.30	0.40	0.10	0.05-0.20	4.5-5.6	0.05-0.20	0.10	...	0.05	0.15	remainder
6053	H	0.35	0.10	...	1.1-1.4	0.15-0.35	0.10	...	0.05	0.15	remainder
6061	0.40-0.8	0.7	0.15-0.40	0.15	0.8-1.2	0.04-0.35	0.25	0.15	0.05	0.15	remainder
7050	0.12	0.15	2.0-2.6	0.10	1.9-2.6	0.04	5.7-6.7	0.06	0.05'	0.15'	remainder
7075	0.40	0.50	1.2-2.0	0.30	2.1-2.9	0.18-0.28	5.1-6.1	0.20	0.05	0.15	remainder
7178	0.40	0.50	1.6-2.4	0.30	2.4-3.1	0.18-0.28	6.3-7.3	0.20	0.05	0.15	remainder

