COMET METALS

RED METALS ALLOY GUIDE

		COPPERS			BRASSES		PHOSPHOR BRONZES		NICKEL SILVERS	
CDA NO.		101	102	110	230	260	510	521	752	770
ASTM B		152	152	152	36	36	103	103	122	122
ALLOY NAME AND NOMINAL COMPOSITION		**OFE COPPER (CERTIFIED) 99.99 CU MIN .001 OXYGEN MAX**	**OF COPPER (Certified) 99.9CU MIN .001 Oxygen Max**	**ETP COPPER 99.9 Cu MIN 05 Oxygen MAX**	**RED BRASS 85 Cu 15 Zni**	**CARTRIDGE BRASS 70 Cu 30 Zn**	**PHOSPHER BRONZE 5% A 94.9 Cu 5Sn 0.1 P**	**PHOSPHER BRONZE 8% C 91.9 Cu 8 Sn 0.1 P**	**NICKEL SILVERS 18% 65 Cu 17 Zn 18 Ni**	**NICKEL SILVERS 18% 55 Cu 27 Zn 18 Ni**
MECHANICAL PROPERTIES										
DENSITY	**A**	.323	.323	.322	.316	.308	.320	.318	.316	.314
MOD. OF ELAST	**B**	17	17	17	17	16	16	16	18	18
ELECTRICAL COND	**C**	101	101	101	37	28	15	13	6	5.5
THERMAL COND.	**D**	226	226	226	92	70	40	36	19	17
COEF. OF THERM EXP.	**E**	9.8	9.8	9.8	10.4	11.1	9.9	10.1	9.0	9.3
ANNEALED	TENSILE **F**	26-38	26-38	26-38	39-47	45-61	46-56	56-65	53-63	61-76
	YIELD **G**	6-13	6-13	6-13	8-19	10-33	19-29	23-35	18-32	23-41
	ELONG. **H**	20-50	20-50	20-50	43-48	40-67	48-62	60-67	29-42	39-48
	ROCKWELL **I**	F 75 MAX	F 75 MAX	F 75 MAX	15-44	16-60	34-47	45-57	39-60	39-65
1/4 HARD	TENSILE	34-42	34-42	34-42	44-54	45-61	49-61	63-75	58-72	69-87
	YIELD	26-39	26-39	26-39	23-48	21-46	22-52	35-62	26-64	44-83
	ELONG.	13-33	13-33	13-33	15-39	34-59	32-50	40-60	14-35	11-41
	ROCKWELL	18-51	18-51	18-51	42-57	43-57	43-63	59-71	49-67	63-75
1/2 HARD	TENSILE	37-46	37-46	37-46	51-61	57-67	58-73	69-84	66-80	78-95
	YIELD	30-44	30-44	30-44	43-54	42-60	47-68	51-75	48-78	64-93
	ELONG.	8-32	8-32	8-32	8-21	19-42	10-38	25-49	6-22	5-24
	ROCKWELL	43-47	43-47	43-47	56-64	56-66	53-69	63-75	62-72	71-78
3/4 HARD	TENSILE	41-50	41-50	41-50	57-67	64-74	68-79	80-92	74-86	88-101
	YIELD	39-48	39-48	39-48	51-60	55-69	61-75	70-85	69-82	84-100
	ELONG.	5-24	5-24	5-24	4-12	8-25	10-20	18-32	4-12	3-13
	ROCKWELL	47-49	47-49	47-49	63-68	65-70	66-73	71-78	66-74	73-78
HARD	TENSILE	43-52	43-52	43-52	63-72	71-81	76-91	85-100	78-91	92-107
	YIELD	41-50	41-50	41-50	57-65	67-78	74-88	78-95	75-90	90-106
	ELONG.	3-16	3-16	3-16	5-9	6-14	9-11	12-30	3-7	3-6
	ROCKWELL	54-62	54-62	54-62	67-71	70-73	71-75	66-75	70-76	76-80
EXTRA HARD	TENSILE	47-546	47-546	47-546	72-80	83-92	88-103	97-112	86-98	102-115
	YIELD	46-55	46-55	46-55	65-71	79-87	85-102	92-107	85-97	101-114
	ELONG.	3-5	3-5	3-5	3-5	2-5	2-6	10-17	3-4	1-2
	ROCKWELL	56-64	56-64	56-64	70-74	74-76	74-78	77-82	74-79	79-82
SPRING	TENSILE	50-58	50-58	50-58	78-86	91-100	95-110	105-119	90-101	108-120
	YIELD	48-57	48-57	48-57	69-76	82-91	92-108	100-113	88-99	107-118
	ELONG.	2-4	2-4	2-4	3-4	1-2	1-3	3-9	1-2	1 MAX
	ROCKWELL	60-66	60-66	60-66	74-76	76-78	76-80	78-83	75-80	80 MIN
EXTRA SPRING	TENSILE	52 MIN	52 MIN	52 MIN	82-90	95-104	100-114	110-122	96 MIN	116 MIN
	YIELD	51 MIN	51 MIN	51 MIN	73-80	86-93	98-110	105-116	95 MIN	115 MIN
	ELONG.	3 MAX	3 MAX	3 MAX	2 MIN	1-2	1-3	2-6	2 MAX	1 MAX
	ROCKWELL	61 MIN	61 MIN	61 MIN	75-77	77-79	77-81	79-83	76 MIN	81 MIN

A Lbs. per cu. In. at 68° F (Annealed) (x27.68 gms./cu. Cm. at 20° C)

B x 10^6 PSI, tension

C % IACS at 68°F (20°C) as annealed

D BTU per sq. ft. per hr. per F° at 68°F (20° C)

E Inches/inch/°F x 10^6 from 68°F to 572°F (20°C to 300C)

F x 1000 PSI

G x 1000 PSI (0.2% offset)

H % in 2 inches

I .020˝ gauge and above (30T scale)

CONTACT COMET FOR SPECIAL 1-GRAIN SIZE, 2-FORMABILITY, 3-PROPERTIES

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