

Properties of Some Popular Alloys Poured in Our Casting Divisions

DESCRIPTION	CAST	UNS #	WROUGHT	ASTM	C	Mn	Si	P	S	Cr	Ni	Other Elements	Tensile (ksi)	Yield (ksi)	Elongation (%)	Reduction of Area (%)	Hardness (Brinell b)
CORROSION RESISTANT STAINLESS STEEL	C12	J82090	---	A217	0.20	0.35 - 0.65	1.00	0.04	0.045	8.0 - 10.0	---	Mo 0.9 - 1.2	90 - 115	60	18	35	220
(HARDENABLE)	C12A	J84090	---	A217	0.08 - 0.12	0.3 - 0.12	0.2 - 0.5	0.02	0.01	8.0 - 9.5	0.40	Mo 0.85 - 1.05, Cb 0.06 - 0.1, N 0.03 - 0.07	85 - 110	60	20	45	---
	CA15	J91150	410	A217/A487	0.15	1.00	1.50	0.04	0.04	11.5 - 14	1.00	Mo 0.5	90 - 115	65	18	30	225
	CA15M	J91151	---	A487/A743	0.15	1.00	0.65	0.04	0.04	11.50 - 14.0	1.00	Mo 0.15 - 1.00	90	65	18	30	---
	CA40	J91153	420	A743	0.20 - 0.40	1.00	1.50	0.04	0.04	11.5 - 14	1.00	Mo 0.5	100	70	15	25	---
	CA120	J91639	440C	AMS5352	0.95 - 1.2	1.00	1.00	0.04	0.03	16.0 - 18.0	0.75	Mo 0.35 - 0.75, Cu 0.75	---	---	---	---	C
	CA6NM A	J91540	F6NM	A487/A743	0.06	1.00	1.00	0.04	0.03	11.5 - 14.0	3.5 - 4.5	Mo 0.4 - 1.0	110	80	15	35	269
	CA6NM B	J91540	---	A487	0.06	1.00	1.00	0.04	0.03	11.5 - 14.0	3.5 - 4.5	Mo 0.4 - 1.0	100	75	17	35	255
	CA6N	J91650	---	A743	0.06	0.50	1.00	0.02	0.02	10.5 - 12.0	6.0 - 8.0	---	140	135	15	50	340
	CA28MWW	J91422	422	A743	0.2 - 0.28	0.5 - 1.0	1.00	0.03	0.03	11.0 - 12.5	0.5 - 1.0	Mo 0.9 - 1.25, W 0.9 - 1.25, V 0.2 - 0.3	140	110	10	24	---
	CB7Cu-1	J92180	17-4	A747	0.07	0.07	1.00	0.035	0.03	14.0 - 15.5	4.5 - 5.5	Cb 0.15 - 0.35, N 0.05, Cu 2.5 - 3.2	C	C	C	C	C
	CB7Cu-2	J92110	15-5	A747	0.07	0.07	1.00	0.035	0.03	14.0 - 15.5	4.5 - 5.5	Cb 0.15 - 0.35, N 0.05, Cu 2.5 - 3.2	C	C	C	C	C
CORROSION RESISTANT STAINLESS STEEL (NON-HARDENABLE)	CB30	J91803	431	A743	0.30	1.00	1.50	0.04	0.04	18.0 - 21.0	2.00	---	65	30	---	---	241
	CC50	J92615	446	A743	0.05	1.00	1.50	0.04	0.04	26.0 - 30.0	4.0 max	---	55	---	---	---	241
	CD4MCu(1A)	J93370	255	A351/A890/A995	0.04	1.00	1.00	0.04	0.04	24.5 - 26.5	4.75 - 6.0	Mo 1.75 - 2.25, Cu 2.75 - 3.25	100	70	16	---	---
	CD4MCu(1B)	J93372	255	A890/A995	0.04	1.00	1.00	0.04	0.04	24.5 - 26.5	4.75 - 6.0	Mo 1.7 - 2.3, Cu 2.7 - 3.3, N 0.1 - 0.25	100	70	16	---	---
	CE8MN(2A)	J93345	---	A351/A890/A995	0.08	1.00	1.50	0.04	0.04	22.5 - 25.5	8.0 - 11.0	Mo 3.0 - 4.5, N 0.1 - 0.3	95	65	25	---	---
	CD6MN(3A)	J93371	---	A890/A995	0.06	1.00	1.00	0.04	0.04	24.0 - 27.0	4.0 - 6.0	Mo 1.75 - 2.5, N 0.15 - 0.25	95	65	25	---	---
	CD3MN(4A)	J92205	---	A890/A995	0.03	1.50	1.00	0.04	0.02	21.0 - 23.5	4.5 - 6.5	Mo 2.5 - 3.5, Cu 1.0, N 0.1 - 0.3	90	60	25	---	---
	CE3MN(5A)	J93404	---	A890/A995	0.03	1.50	1.00	0.04	0.04	24.0 - 26.0	6.0 - 8.0	Mo 4.0 - 5.0, N 0.1 - 0.3	100	75	18	---	---
	CD3MWCuN(6A)	J93380	---	A351/A890/A995	0.03	1.00	1.00	0.03	0.025	24.0 - 26.0	6.5 - 8.5	Mo 3.0 - 4.0, Cu 0.5 - 1.0, W 0.5 - 1.0, N 0.2 - 0.3	100	65	25	---	---
	CE30	J93423	312	A743	0.03	1.50	2.00	0.04	0.04	26.0 - 30.0	8.0 - 11.0	---	80	40	10	---	190
	CF3	J92500	304L	A351/A743	0.03	1.50	2.00	0.04	0.04	17.0 - 21.0	8.0 - 21.0	---	70	30	35	---	134 - 196
	CF3M	J92800	316L	A351/A743	0.03	1.50	1.50	0.04	0.04	17.0 - 21.0	9.0 - 13.0	Mo 2.0 - 3.0	70	30	30	---	136 - 202
	CF3MN	J92804	316LN	A351/A743	0.03	1.50	1.50	0.04	0.04	17.0 - 22.0	9.0 - 13.0	---	75	37	35	---	---
	CF8	J92600	304	A743	0.08	1.50	2.00	0.04	0.04	18.0 - 21.0	8.0 - 11.0	---	70	30	35	---	134 - 196
	CF8(nm)	J92600	304	A743	0.08	0.05 - 1.5	1.00	0.04	0.04	17.5 - 18.5	10.0 - 12.0	Mo .05, Cu .05	---	---	---	---	---
	CF8C	J92710	347	A351/A743	0.08	1.50	2.00	0.04	0.04	18.0 - 21.0	9.0 - 12.0	Cb 8 X C min, 1.0 max	70	30	30	---	---
	CF8M	J92900	316	A351/A743	0.08	1.50	2.00	0.04	0.04	18.0 - 21.0	9.0 - 12.0	Mo 2.0 - 3.0	70	30	30	---	146 - 212
	CF8M(nm)	J92900	316	A351/A743	0.08	1.50	2.00	0.04	0.04	18.0 - 21.0	9.0 - 12.0	Mo 2.0 - 3.0	---	---	---	---	---
	CF10	---	304H	A351	0.04 - 0.1	1.50	2.00	0.04	0.04	18.0 - 21.0	9.0 - 11.0	Mo 0.5	70	30	35	---	134 - 196
	CF10M	J92901	316H	A351	0.04 - 0.1	1.50	1.50	0.04	0.04	18.0 - 21.0	9.0 - 12.0	Mo 2.0 - 3.0	70	30	30	---	146 - 212
	CF10SMnN	J92972	Nitronic 60	A351/A743	0.10	7.0 - 9.0	3.5 - 4.5	0.06	0.03	16.0 - 18.0	8.0 - 9.0	N 0.08 - 0.18	75	35	30	---	207
	CF16F	J92701	303	A743	0.16	1.50	2.00	0.17	0.04	18.0 - 21.0	9.0 - 12.0	Mo 1.5, Se 0.20 - 0.35	70	30	25	---	134 - 196
	CG6MMn	J93790	Nitronic 50	A351/A743	0.06	4.0 - 6.0	1.00	0.04	0.03	20.5 - 23.5	11.5 - 13.5	Mo 1.5 - 3.0, Cb 0.10 - 0.30, V 0.1 - 0.3, N 0.2 - 0.4	85	42	30	---	---
	CG3M	J92999	317L	A743	0.03	1.50	1.50	0.04	0.04	18.0 - 21.0	9.0 - 13.0	Mo 3.0 - 4.0	75	35	25	---	162 - 220
	CG8M	J93000	317	A351/A743	0.08	1.50	1.50	0.04	0.04	18.0 - 21.0	9.0 - 13.0	Mo 3.0 - 4.0	75	35	25	---	162 - 220
	CH20	J93402	309	A351/A743	0.02	1.50	2.00	0.04	0.04	22.0 - 26.0	12.0 - 15.0	---	70	30	30	---	---
	CK20	J94202	310	A351	0.02	2.00	2.00	0.04	0.04	23.0 - 27.0	19.0 - 22.0	---	65	28	30	---	144
	CN3M	J94652	---	A743	0.03	2.00	1.00	0.04	0.01	20.0 - 22.0	23.5 - 25.5	Mo 6.0 - 7.0, Cu 0.75, N 0.18 - 0.26	63	25	30	---	---
	CN7M	J08007	Carpenter 20	A351/A743	0.07	1.50	1.50	0.04	0.04	19.0 - 22.0	27.5 - 30.5	Mo 2.0 - 3.0, Cu 3.0 - 4.0	62	25	35	---	137
	CN7Mcb3	---	Carpenter 20Cb3	---	0.06	2.00	1.00	---	---	19.0 - 21.0	32.5 - 35.0	Mo 2.0 - 3.0, Cu 3.0 - 4.0, Cb 1.0	62	25	35	---	154
	CN4MCu	---	Uddeholm 904L	---	0.03	2.00	1.50	0.03	0.03	19.0 - 23.0	23.0 - 27.0	Mo 4.0 - 5.0, Cu 2.0	65	28	35	---	130
	ILLIUM P	---	---	---	0.15 - 0.25	0.001 - 1.0	0.6 - 0.75	0.04	0.04	26.5 - 27.0	8.25 - 8.75	Mo 2.0 - 2.5, N 0.12 - 0.2, Cu 3.0 - 3.5	100	72	15	---	235
	ILLIUM PD	---	---	---	0.08	1.00	1.00	0.04	0.04	24.0 - 28.0	4.0 - 6.5	Mo 1.75 - 3.0, Cu 0.5, Co 5.0 - 8.0	90	60	20	---	226
NICKEL BASE ALLOYS	CW2M	N26455	CA	A494	0.02	1.00	0.08	0.03	0.03	15.0 - 17.5	Bal	Mo15.0-17.5, Fe 2.0, Cb 1.0	70	40	20	---	191
	CW6M	N30107	---	A494	0.07	1.00	1.00	0.04	0.03	17.0 - 20.0	Bal	Mo 17.0 - 20.0, Fe 3.0	72	40	25	---	---
	CW6MC	N26625	IN-625	A494	0.06	1.00	1.00	.015	.015	20.0 - 23.0	Bal	Mo 8.0 - 10.0, Fe 5.0, Cb 3.15 - 4.5	70	40	25	---	176
	CW12MW	N30002	Hastelloy C	A494	0.12	1.00	1.00	0.04	0.03	15.5 - 17.5	Bal	Mo 16.0 - 18.0, Fe 4.5 - 7.5, W 3.75 - 5.25, V 0.2 - 0.4	72	40	4	---	204
	CY40	N06040	Inconel 600	A494	0.40	1.50	3.00	0.03	0.03	14.0 - 17.0	Bal	Fe 11.0	70	28	30	---	150
	CZ100	N02100	Nickel 200	A494	1.00	1.50	2.00	0.03	0.03	---	95 min	Fe 3.0, Cu 1.25	50	18	10	---	145
	M35-1	N24135	Monel 400	A494	0.35	1.50	1.25	0.03	0.03	---	Bal	Cu 26.0 - 33.0, Fe 3.5, Cb 0.5	65	25	25	---	135
	M35-2	N04020	Monel 400	A494	0.35	1.50	2.00	0.03	0.03	---	Bal	Cu 26.0 - 33.0, Fe 3.5 max, Cb 0.5	65	30	25	---	134
	M30H	N24030	---	A494	0.30	1.50	2.7 - 3.7	0.03	0.03	---	Bal	Cu 27.0 - 33.0, Fe 3.5	100	60	10	---	243 - 294
	M25S	N24025	---	A494	0.25	1.50	3.5 - 4.5	0.03	0.03	---	Bal	Cu 27.0 - 33.0, Fe 3.5	---	---	---	---	271 - 327
	M30C	N24130	Monel 401	A494	0.30	1.50	1.0 - 2.0	0.03	0.03	---	Bal	Cu 26.0 - 33.0, Fe 3.5, Cb 1.0 - 3.0	65	32.5	25	---	125 - 150
	N7M	N30007	B2	A494	0.07	1.00	1.00	0.04	0.03	1.00	Bal	Mo 30.0 - 33.0, Fe 3.0	76	40	20	---	230
	N12MV	N30012	Hastelloy B	A494	0.12	1.00	1.00	0.04	0.04	1.00	Bal	Mo 26.0 - 30.0, Fe 4.0 - 6.0, V 0.2 - 0.6	76	40	6	---	223
	ILLIUM B	---	---	---	0.07	1.50	3.25 - 4.0	0.04	0.03	26.0 - 30.0	Bal	Mo 7.5 - 9.5, Cu 4.0 - 6.5, B 0.05 - 0.1, Fe 2.5	61	60	1	---	240
	ILLIUM F	N06007	Hastelloy G	---	0.12	1.0 - 2.0	1.00	0.04	0.03	21.0 - 23.0	---	Mo 5.5 - 7.5, Cu 1.5 - 2.5, Cb 2.5, W 1.0, Fe 18.0 - 21.0	70	40	15	---	192
	ILLIUM G	---	---	---	0.14 - 0.23	1.50	1.25	0.04	0.03	21.0 - 24.0	---	Mo 5.5 - 7.5, Cu 4.5 - 7.5, Fe 8.0	68	39	7.5	---	192
	ILLIUM GX	---	Hastelloy X	A567	0.02	1.00	1.00	0.04	0.03	20.5 - 23.0	---	Mo 8.0 - 10.0, Co 0.5 - 2.5, W 0.2 - 1.0, Fe 17.0 - 20.0	55	35	8	---	179
	ILLIUM 98	---	---	---	0.07	1.50	1.25										

	HE	J93403	312	A297	0.2 - 0.5	2.00	2.00	0.04	0.04	26.0 - 30.0	8.0 - 11.0	Mo 0.5	85	40	9	---	200
	HF	J92603	302	A297	0.2 - 0.4	2.00	2.00	0.04	0.04	18.0 - 23.0	8.0 - 12.0	Mo 0.5	70	35	25	---	165
	HH	J93503	309	A297/A447	0.2 - 0.5	2.00	2.00	0.04	0.04	24.0 - 28.0	11.0 - 14.0	Mo 0.5, N 0.2	75	35	10	---	180
	HK40	J94204	310H	A351	0.35 - 0.45	1.50	1.75	0.04	0.04	23.0 - 27.0	19.0 - 22.0	Mo 0.5	62	35	10	---	170
	HT	N08002	330	A297	0.35 - 0.75	2.00	2.50	0.04	0.04	15.0 - 19.0	33.0 - 37.0	Mo 0.5	65	---	4	---	180
	HU	N08004	---	A297	0.35 - 0.75	2.00	2.50	0.04	0.04	17.0 - 21.0	37.0 - 41.0	Mo 0.5	65	---	4	---	170
	HW	N08001	---	A297	0.35 - 0.75	2.00	2.50	0.04	0.04	10.0 - 14.0	58.0 - 62.0	Mo 0.5	60	---	---	---	185
	HX	---	---	A297	0.35 - 0.75	2.00	2.50	0.04	0.04	15.0 - 19.0	64.0 - 68.0	Mo 0.5	60	---	---	---	176
CAST IRONS	NiResist1	F41000	---	A436	3.00	0.5 - 1.5	1.0 - 2.8	---	0.12	1.5 - 2.5	13.5 - 17.5	Cu 5.5 - 7.5	25	---	---	---	131 - 183
GRAY, DUCTILE, WHITE	NiResist 1b	F41001	---	A436	3.00	0.5 - 1.5	1.0 - 2.8	---	0.12	2.5 - 3.5	13.5 - 17.5	Cu 5.5 - 7.5	30	---	---	---	149 - 212
	NiResist 2	F41002	---	A436	3.00	0.5 - 1.5	1.0 - 2.8	---	0.12	1.5 - 2.5	18.0 - 22.0	Cu .5	25	---	---	---	118 - 174
	NiResist 2b	F41003	---	A436	3.00	0.5 - 1.5	1.0 - 2.8	---	0.12	3.0 - 6.0	18.0 - 22.0	Cu .5	30	---	---	---	171 - 248
	NiResist 3	F41004	---	A436	2.60	0.5 - 1.5	1.0 - 2.0	---	0.12	2.5 - 3.5	28.0 - 32.0	Cu .5	25	---	---	---	118 - 159
	NiResist 5	F41006	---	A436	2.40	0.5 - 1.5	1.0 - 2.0	---	0.12	0.15	34.0 - 36.0	Cu .5	20	---	---	---	99 - 124
	NiResist D2	F43000	---	A439	3.00	0.7 - 1.25	1.5 - 3.0	0.08	---	1.75 - 2.75	18.0 - 22.0	---	58	30	8	---	139 - 202
	NiResist D2B	F43001	---	A439	3.00	0.7 - 1.25	1.5 - 3.0	0.08	---	2.75 - 4.0	18.0 - 22.0	---	58	30	7	---	148 - 211
	NiResist D2C	F43002	---	A439	2.90	1.8 - 2.4	1.0 - 3.0	0.08	---	0.50	21.0 - 24.0	---	58	28	20	---	121 - 171
	NiResist D3	F43003	---	A439	2.60	1.00	1.0 - 2.8	0.08	---	2.5 - 3.5	28.0 - 32.0	---	55	30	6	---	139 - 202
	NiResist D5	F43006	---	A439	2.40	1.00	1.0 - 2.8	0.08	---	0.10	34.0 - 36.0	---	55	30	20	---	131 - 185
	NiResist D5B	F43007	---	A439	2.40	1.00	1.0 - 2.8	0.08	---	2.0 - 3.0	34.0 - 36.0	---	55	30	6	---	139 - 193
	NiResist D5S	---	---	A439	2.30	1.00	4.9 - 5.5	0.08	---	1.75 - 2.25	34.0 - 37.0	---	65	30	10	---	131 - 193
	I A	F45000	---	A532	2.8 - 3.6	2.00	0.80	0.30	0.15	1.4 - 4.0	3.3 - 5.0	Mo 1.0	---	---	---	---	C
	I B	F45001	---	A532	2.4 - 3.0	2.00	0.80	0.30	0.15	1.4 - 4.0	3.3 - 5.0	Mo 1.0	---	---	---	---	C
	I C	F45002	---	A532	2.5 - 3.7	2.00	0.80	0.30	0.15	1.0 - 2.5	4.00	Mo 1.0	---	---	---	---	C
	I D	F45003	---	A532	2.5 - 3.6	2.00	2.00	0.10	0.15	7.0 - 11.0	4.5 - 7.0	Mo 1.5	---	---	---	---	C
	II A	F45004	---	A532	2.0 - 3.3	2.00	1.50	0.10	0.06	11.0 - 14.0	2.50	Mo 3.0, Cu 1.2	---	---	---	---	C
	II B	F45005	---	A532	2.0 - 3.3	2.00	1.50	0.10	0.06	14.0 - 18.0	2.50	Mo 3.0, Cu 1.2	---	---	---	---	C
	II D	F45007	---	A532	2.0 - 3.3	2.00	1.2 - 2.2	0.10	0.06	18.0 - 23.0	2.50	Mo 3.0, Cu 1.2	---	---	---	---	C
	III A	---	---	A532	2.0 - 3.0	2.00	1.50	0.10	0.06	23.0 - 30.0	2.50	Mo 3.0, Cu 1.2	---	---	---	---	C
	Cast Iron	---	---	A48	3.50	---	2.50	---	---	---	---	Fe Bal	---	---	---	---	---
CARBON AND LOW ALLOY STEELS	WCA	J02502	---	A216	0.25	0.70	0.60	0.04	0.045	0.50	0.50	Mo 0.2, Cu 0.3, V 0.03	60 - 85	30	24	35	---
	WCB	J03002	1030	A216	0.30	1.00	0.60	0.04	0.045	0.50	0.50	Mo 0.2, Cu 0.3, V 0.03	70 - 95	36	22	35	---
	WCC	J02503	---	A216	0.25	1.20	0.60	0.04	0.045	0.50	0.50	Mo 0.2, Cu 0.3, V 0.03	70 - 95	40	22	35	---
	WC1	J12524	---	A217	0.25	0.5 - 0.5	0.60	0.04	0.045	---	---	Mo 0.45 - 0.65	65 - 90	35	24	35	---
	WC4	J12082	---	A217	0.05 - 0.2	0.5 - 0.8	0.60	0.04	0.045	0.5 - 0.8	0.7 - 1.1	Mo 0.45 - 0.65	70 - 95	40	20	35	---
	WC5	J22000	---	A217	0.05 - 0.2	0.4 - 0.7	0.60	0.04	0.045	0.5 - 0.9	0.6 - 1.0	Mo 0.45 - 0.65	70 - 95	40	20	35	---
	WC6	J12072	---	A217	0.05 - 0.2	0.5 - 0.8	0.06	0.04	0.045	1.0 - 1.5	---	Mo 0.45 - 0.65	70 - 95	40	20	35	---
	WC9	J21890	---	A217	0.05 - 0.18	0.4 - 0.7	0.60	0.04	0.045	2.0 - 2.75	---	Mo 0.9 - 1.2	70 - 95	40	20	35	---
	WC11	J11872	---	A217	0.15 - 0.21	0.5 - 0.8	0.3 - 0.6	0.02	0.015	1.0 - 1.5	---	Mo 0.45 - 0.65	80 - 105	50	18	45	---
	C5	J42045	502	A217	0.20	0.4 - 0.7	0.75	0.04	0.045	4.0 - 6.5	---	Mo 0.45 - 0.65	90 - 115	60	18	35	---
	LCA	J02504	---	A352	0.25	0.70	0.60	0.04	0.045	---	---	Mo 0.2	60 - 85	30	24	35	---
	LCB	J03003	1030	A352	0.30	1.00	0.60	0.04	0.045	---	---	---	65 - 90	35	24	35	---
	LCC	J02505	---	A352	0.25	1.20	0.60	0.04	0.045	---	---	---	70 - 95	40	22	35	---
	LC1	J12522	---	A352	0.25	0.5 - 0.8	0.60	0.04	0.045	---	---	Mo 0.45 - 0.65	65 - 90	35	24	35	---
	LC2	J22500	---	A352	0.25	0.5 - 0.8	0.60	0.04	0.045	---	2.0 - 3.0	---	70 - 95	40	24	35	---
	LC2-1	J42215	---	A352	0.22	0.55 - 0.75	0.50	0.04	0.045	1.35 - 1.85	2.5 - 3.5	Mo 0.3 - 0.6	105 - 130	80	18	30	---
	LC3	J31550	---	A352	0.15	0.5 - 0.8	0.60	0.04	0.04	---	3.0 - 4.0	---	70 - 95	40	24	35	---
	LC4	J41500	---	A352	0.15	0.5 - 0.8	0.60	0.04	0.045	---	4.0 - 5.0	Cu 0.3	70 - 95	40	24	35	---
	LC9	J31300	---	A352	0.13	0.90	0.45	0.04	0.045	0.50	8.5 - 10.0	Mo 0.2, V 0.03	85	75	20	30	---
	1018	---	1018	---	0.15 - 0.2	0.90	0.2 - 0.8	0.04	0.05	0.35	0.50	Mo 0.25, Cu 0.5, Al .04 - .08	60	40	24	---	116
	1A(1020)	J02002	---	A732/A915	0.15 - 0.25	0.2 - 0.6	0.2 - 1.0	0.04	0.045	---	---	---	60	40	24	---	---
	2A(1030)	J03011	1030	A732/A915	0.25 - 0.35	0.7 - 1.0	0.2 - 1.0	0.04	0.045	---	---	---	65	45	25	---	---
	3A(1040)	J04002	---	A732/A915	0.35 - 0.45	0.7 - 1.0	0.2 - 1.0	0.04	0.045	---	---	---	75	48	25	---	---
	1045	J04502	1045	A915	0.43 - 0.5	0.5 - 0.9	0.3 - 0.6	0.04	0.04	---	---	---	80	40	17	---	163
	4A(1050)	---	---	A732	0.45 - 0.55	0.7 - 1.0	0.2 - 1.0	0.04	0.045	---	---	---	90	50	20	---	---
	5N(6120)	J13052	---	A732	0.30	0.7 - 1.0	0.2 - 0.8	0.04	0.045	---	---	V 0.05 - 0.15	85	55	22	---	---
	6N(4020)	J13512	---	A732	0.35	1.35 - 1.75	0.2 - 0.8	0.04	0.045	---	---	Mo 0.25 - 0.55	90	60	20	---	---
	7Q(4130)	J13045	4130	A732/A915	0.25 - 0.35	0.4 - 0.7	0.2 - 0.8	0.04	0.045	0.8 - 1.1	---	Mo 0.15 - 0.25	150	115	7	---	---
	8Q(4140)	J14049	4140	A732/A915	0.35 - 0.45	0.7 - 1.0	.02 - 0.8	0.04	0.045	0.8 - 1.1	---	Mo 0.15 - 0.25	180	145	5	---	---
	9Q(4330)	J23055	---	A732/A915	0.25 - 0.35	0.4 - 0.7	.02 - 0.8	0.04	0.045	0.7 - 0.9	1.65 - 2.0	Mo 0.2 - 0.3	150	115	7	---	---
	10Q(4340)	J24045	4340	A732/A915	0.35 - 0.45	0.7 - 1.0	.02 - 0.8	0.04	0.045	0.7 - 0.9	1.65 - 2.0	Mo 0.2 - 0.3	180	145	5	---	---
	11Q(4620)	J12094	---	A732	0.15 - 0.25	0.4 - 0.7	.02 - 0.8	0.04	0.045	---	1.65 - 2.0	Mo 0.2 - 0.3	120	100	10	---	---
	12Q(6150)	J15048	6150	A732	0.45 - 0.55	0.65 - 0.95	.02 - 0.8	0.04	0.045	0.8 - 1.1	---	V 0.15 min	190	170	4	---	---
	13Q(8620)	J12048	8620	A732/A915	0.15 - 0.25	0.65 - 0.95	.02 - 0.8	0.04	0.045	0.4 - 0.7	0.4 - 0.7	Mo 0.15 - 0.25	105	85	10	---	---
	14Q(8630)	J13051	---	A732/A915	0.25 - 0.35	0.65 - 0.95	.02 - 0.8	0.04	0.045	0.4 - 0.7	0.4 - 0.7	Mo 0.15 - 0.25	150	115	7	---	---
	15A(52100)	J19966	---	A732	0.95 - 1.1	0.25 - 0.55	.02 - 0.8	0.04	0.045	1.3 - 1.6	---	---	---	---	---	---	---
	9N	J13502	4130	A487	0.5 - 0.33	0.6 - 1.0	0.80	0.04	0.045	0.75 - 1.1	---	Mo 0.15 - 0.3	90	60	18	---	---
TOOL STEELS	CA-2	T90102	A-2	A597	0.95 - 1.05	0.75	1.50	0.03	0.03	4.75 - 5.5	---	Mo 0.9 - 1.4, V 0.2 - 0.5	---	---	---	---	---
	CD-2	T90402	D-2	A597	1.4 - 1.6	1.00	1.50	0.03	0.03	11.0 - 13.0	---	Mo 0.7 - 1.2, V 0.4 - 1.0, Co 0.7 - 1.0	---	---	---	---	---
	CL-6	---	L-6	---	0.65 - 0.75	0.25 - 0.8	0.1 - 0.5	0.03	0.03	0.6 - 1.2	1.25 - 2.0	Mo 0.5	---	---	---	---	---
	CM-2	T11302	M-2	A597	0.78 - 0.88	0.75	1.00	0.03	0.03	3.75 - 4.5	0.25	Mo 4.5 - 5.5, V 1.25 - 2.2, Co 2.5, W 5.5 - 6.75	---	---	---	---	---
	CO-1	T91501	O-1	A597	0.85 - 1.0	1.0 - 1.3	1.50	0.03	0.03	0.4 - 1.0	---	V 0.3, W 0.4 - 0.6	---	---	---	---	---
	CS-7	T41907	S-7	A597	0.45 - 0.55	0.4 - 0.8	0.6 - 1.0	0.03	0.03	3.0 - 3.5	---	Mo 1.2 - 1.6	---	---	---	---	---
SPECIAL ALLOYS	70-30 CuNi	C96400	---	B369	0.15	1.50	0.50	0.02	0.02	---	28.0 - 32.0	Pb 0.01, Fe 0.25 - 1.5, Nb 0.5 - 1.5, Cu Bal	60	32	20	---	145
	Invar 36	---	---	---	0.10	0.50	0.35	0.02	0.02	0.25	35.5 - 36.5	---	48	31	42	---	125

C = Conditional