

**TABLE XI - TOOL STEELS**  
Typical Chemical Range Percentages\*

<i>Alloy</i>	<i>Carbon</i>	<i>Manganese</i>	<i>Silicon</i>	<i>Chromium</i>	<i>Molybdenum</i>	<i>Tungsten</i>	<i>Vanadium</i>	<i>Other</i>
CA-2	.95 1.05	.75	1.50	4.75 5.50	.90 1.40	---	.20-.50 Optional	
CA-6	.65 .75	1.80 2.20	1.00	.80 1.20	.80 1.30	---	---	
CD-2	1.40 1.60	1.00	1.50	11.0 13.00	.70 1.20	---	.40-1.00 Optional	
CD-3	2.10 2.30	.75	1.00	11.5 13.0	.40	---	---	
CD-6	2.10 2.35	.75	.80 1.20	11.5 13.0	.40	.80 1.20	---	
CD-7	2.15 2.45	.75	1.00	11.5 13.0	.80 1.20	---	3.50-4.50	
CH-11	.30 .40	.75	.95 1.15	4.6 5.4	1.20 1.60	---	.30-.50	
CH-12	.30 .40	.75	1.50	4.75 5.75	1.25 1.75	1.00 1.70	.20-.50	
CH-13	.30 .42	.75	1.50	4.75 5.75	1.25 1.75	---	.75-1.20	
CL-6	.65 .75	.75	1.00	.80 1.0	---	---	---	1.50-1.90 Ni
C1-M-2	.95 1.05	.75	1.00	3.75 4.50	4.50 5.50	5.50 6.75	1.75 2.20	.25Ni
CM-2	.78 .88	.75	1.00	3.75 4.50	4.50 5.50	5.50 6.75	1.25 2.20	.25Ni
CM-4	1.25 1.35	.75	1.00	3.75 4.50	4.50 5.50	5.20 6.20	3.60-4.40	
CM-42	1.00 1.20	.75	1.00	3.50 4.25	9.00 10.00	1.25 1.75	.95 1.35	7.50-8.50 Co
CM-43	1.15 1.35	.75	1.00	3.50 4.25	8.25 9.25	1.50 2.00	1.50 2.00	7.75-8.75 Co
CO-1	.85 1.00	1.00 1.30	1.50	.40 1.00	---	.40 .60	.30	
CO-2	.85 .95	1.50 1.80	1.00	.40	.30	---	.30	
CO-7	1.10 1.20	.75	1.00	.50 .70	---	1.65 1.85	.15 .25	
CS-1	.45 .55	.75	1.00	1.35 1.65	---	2.35 2.65	---	
CS-2	.45 .55	.75	.90 1.20	---	.40 .60	---	.30	
CS-4	.50 .60	.70 .90	1.80 2.20	.30	---	---	.30	
CS-5	.50 .65	.60 1.00	1.75 2.25	.35	.20 .80	---	.35	
CS-7	.50 .60	.50 .80	1.00	3.00 3.50	1.20 1.60	---	---	
CT-1	.65 .75	.75	1.00	3.75 4.50	---	17.25 18.75	.90 1.30	
CT-2	.80 .90	.75	1.00	3.75 4.50	1.00	17.50 19.00	1.80 2.40	
CT-6	.75 .85	.75	1.00	4.00 4.75	.70 1.00	18.50 21.25	1.50 2.10	10.00- 13.70 Co

\* Max., unless a range is shown .025% S and .025% P max. all grades.

**TABLE XII - HARDNESS VALUES OF CASTINGS AND SEPARATELY CAST TEST BARS OF TOOL STEELS**

<i>Alloy</i>	<i>HARDNESS</i>		
	<i>Annealed with Slow Cool Max.</i>	<i>Cycle Anneal Max.</i>	<i>Hardened Range (Rc)</i>
CA-2	20 Rc	27 Rc	47-60
CA-6	100 Rb		48-59
CD-2		35 Rc	50-59
CD-3		35 Rc	47-61
CD-6	100 Rb		50-63
CD-7	24 Rc		50-63
CH-11	100 Rb		46-55
CH-12	100 Rb		50-53
CH-13	100 Rb		45-53
CL-6	95 Rb		39-60
C1-M-2		30 Rc	61-63
CM-2		30 Rc	61-63
CM-4	30 Rc		62-64
CM-42		35 Rc	60-64
CM-43	27 Rc		61-64
CO-1		100 Rb	45-61
CO-2		100 Rb	38-60
CO-7	95 Rb		35-64
CS-1		100 Rb	44-57
CS-2		100 Rb	44-55
CS-4	100 Rb		42-53
CS-5	100 Rb		37-59
CS-7		100 Rb	35-57
CT-1	100 Rb		60-66
CT-2	100 Rb		60-66
CT-6	30 Rc		60-64