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## CONVERSION TABLES

### HARDNESS CONVERSION TABLES - HARDENED STEEL AND HARD ALLOYS

Vickers Hardness 10Kg	ROCKWELL HARDNESS					Brinell Hardness 3000kgf	Tensile Strength N/mm <sup>2</sup>
	A 60 kgf Diamond	C 150 kgf Diamond	D 100 kgf Diamond	15N 15 kgf Diamond	30N 30 kgf Diamond		
240	60.7	20.3	40.3	69.6	41.7	19.9	228
245	61.2	21.3	41.1	70.1	42.5	21.1	233
250	61.6	22.2	41.7	70.6	43.4	22.2	238
255	62.0	23.1	42.2	71.1	44.2	23.2	242
260	62.4	24.0	43.1	71.6	45.0	24.3	247
265	62.7	24.8	43.7	72.1	45.7	25.2	252
270	63.1	25.6	44.3	72.6	46.4	26.2	257
275	63.5	26.4	44.9	73.0	47.2	27.1	261
280	63.8	27.1	45.3	73.4	47.8	27.9	266
285	64.2	27.8	46.0	73.8	48.4	28.7	271
290	64.5	28.5	46.5	74.2	49.0	29.5	276
295	64.8	29.2	47.1	74.6	49.7	30.4	280
300	65.2	29.8	47.5	74.9	50.2	31.1	285
310	65.8	31.0	48.4	75.6	51.3	32.5	295
320	66.4	32.2	49.4	76.2	52.3	33.9	304
330	67.0	33.3	50.2	76.8	53.6	35.2	314
340	67.6	34.4	51.1	77.4	54.4	36.5	323
350	68.1	35.5	51.9	78.0	55.4	37.8	333
360	68.7	36.6	52.8	78.6	56.4	39.1	342
370	69.2	37.7	53.6	79.2	57.4	40.4	352
380	69.8	38.8	54.4	79.8	58.4	41.7	361
390	70.3	39.8	55.3	80.3	59.3	42.9	371
400	70.8	40.8	56.0	80.8	60.2	44.1	380
410	71.4	41.8	56.8	81.4	61.1	45.3	390
420	71.8	42.7	57.5	81.8	61.9	46.4	399
430	72.3	43.6	58.2	82.3	62.7	47.4	409
440	72.8	44.5	58.8	82.8	63.5	48.4	418
450	73.3	45.3	59.4	83.2	64.3	49.4	428
460	73.6	46.1	60.1	83.6	64.9	50.4	437
470	74.1	46.9	60.7	83.9	65.7	51.3	447
480	74.5	47.7	61.3	84.3	66.4	52.2	456
490	74.9	48.4	61.6	84.7	67.1	53.1	466
500	75.3	49.1	62.2	85.0	67.7	53.9	475
510	75.7	49.8	62.9	85.4	68.3	54.7	485
520	76.1	50.5	63.5	85.7	69.0	55.6	494
530	76.4	51.1	63.9	86.0	69.5	56.2	504
540	76.7	51.7	64.4	86.3	70.0	57.0	513
550	77.0	52.3	64.8	86.6	70.5	57.8	523
560	77.4	53.0	65.4	86.9	71.2	58.6	532
570	77.8	53.6	65.8	87.2	71.7	59.3	542
580	78.0	54.1	66.2	87.5	72.1	59.9	551
590	78.4	54.7	66.7	87.8	72.7	60.5	561
600	78.6	55.2	67.0	88.0	73.2	61.2	570
610	78.9	55.7	67.5	88.2	73.7	61.7	580
620	79.2	56.3	67.9	88.5	74.2	62.4	589
630	79.5	56.8	68.3	88.8	74.6	63.0	599
640	79.8	57.3	68.7	89.0	75.1	63.5	608
650	80.0	57.8	69.0	89.2	75.5	64.1	618
660	80.3	58.3	69.4	89.5	75.9	64.7	
670	80.6	58.8	69.8	89.7	76.4	65.3	
680	80.8	59.2	70.1	89.8	76.8	65.7	
690	81.1	59.7	70.5	90.1	77.2	66.2	
700	81.3	60.1	70.8	90.3	77.6	66.7	
720	81.8	61.0	71.5	90.7	78.4	67.7	
740	82.2	61.8	72.1	91.0	79.1	68.6	
760	82.6	62.5	72.6	91.2	79.7	69.4	
780	83.0	63.3	73.3	91.5	80.4	70.2	
800	83.4	64.0	73.8	91.8	81.1	71.0	
820	83.8	64.7	74.3	92.1	81.7	71.8	
840	84.1	65.3	74.8	92.3	82.2	72.2	
860	84.4	65.9	75.3	92.5	82.7	73.1	
880	84.7	66.4	75.7	92.7	83.1	73.6	
900	85.0	67.0	76.1	92.9	83.6	74.2	
920	85.3	67.5	76.5	93.0	84.0	74.8	
940	85.6	68.0	76.9	93.2	84.4	75.4	

The figures in brackets ( ) are hardness values that lie outside the range of definition of the standardized hardness test methods but which in practice are frequently used as approximate values. Apart from this, the Brinell hardness values in brackets apply only if the measurement is made with a carbide ball.  
Comprehensive, State of the Art Range of Vickers, Brinell and Rockwell Bench and Portable Hardness Testers, Test Blocks and Indenters.

### SOFT STEEL, GREY AND MALLEABLE CAST IRON AND MOST NON-FERROUS METALS

Rockwell B 100kgf / 1/16" ball	Rockwell A 60 kgf / 1/16" ball	Rockwell F 60kgf / 1/16" ball	Rockwell E 100kgf / 1/8" ball	Superficial Rockwell			VICKERS Hardness Number	BRINELL 3000kgf / 10mm ball
				15T 15 kgf / 1/16" ball	30T 30 kgf / 1/16" ball	45T 45 kgf / 1/16" ball		
100	61.5	-	-	93.1	83.1	72.9	240	240
99	60.9	-	-	92.8	82.5	71.9	234	234
98	60.2	-	-	92.5	81.8	70.9	228	228
97	59.5	-	-	92.1	81.1	69.9	222	222
96	58.9	-	-	91.8	80.4	68.9	216	216
95	58.3	-	-	91.5	79.8	67.9	210	210
94	57.6	-	-	91.2	79.1	66.9	205	205
93	57.0	-	-	90.8	78.4	65.9	200	200
92	56.4	-	-	90.5	77.8	64.8	195	195
91	55.8	-	-	90.2	77.1	63.8	190	190
90	55.2	-	-	89.9	76.4	62.8	185	185
89	54.6	-	-	89.5	75.8	61.8	180	180
88	54.0	-	-	89.2	75.1	60.8	176	176
87	53.4	-	-	88.9	74.4	59.8	172	172
86	52.8	-	-	88.6	73.8	58.8	169	169
85	52.3	-	-	88.2	73.1	57.8	165	165
84	51.7	-	-	87.9	72.4	56.8	162	162
83	51.1	-	-	87.6	71.8	55.8	159	159
82	50.6	-	-	87.3	71.1	54.8	156	156
81	50.0	-	-	86.9	70.4	53.8	153	153
80	49.5	-	-	86.6	69.7	52.8	150	150
79	48.9	-	-	86.3	69.1	51.8	147	147
78	48.4	-	-	86.0	68.4	50.8	144	144
77	47.9	-	-	85.6	67.7	49.8	141	141
76	47.3	-	-	85.3	67.1	48.8	139	139
75	46.8	99.6	-	85.0	66.4	47.8	137	137
74	46.3	99.1	-	84.7	65.7	46.8	135	135
73	45.8	98.5	-	84.3	65.1	45.8	132	132
72	45.3	98.0	-	84.0	64.4	44.8	130	130
71	44.8	97.4	100.0	83.7	63.7	43.8	127	127
70	44.3	96.8	99.5	83.4	63.1	42.8	125	125
69	43.8	96.2	99.0	83.0	62.4	41.8	123	123
68	43.3	95.6	98.5	82.7	61.7	40.8	121	121
67	42.8	95.1	97.5	82.4	61.0	39.8	119	119
66	42.3	94.5	97.0	82.1	60.4	38.7	117	117
65	41.8	93.9	96.0	81.8	59.7	37.7	116	116
64	41.4	93.4	95.5	81.4	59.0	36.7	114	114
63	40.9	92.8	95.0	81.1	58.4	35.7	112	112
62	40.4	92.2	94.5	80.8	57.7	34.7	110	110
61	40.0	91.7	93.5	80.5	57.0	33.7	108	108
60	39.5	91.1	93.0	80.1	56.4	32.7	107	107
59	39.0	90.5	92.5	79.8	55.7	31.7	106	106
58	38.6	90.0	92.0	79.5	55.0	30.7	104	104
57	38.1	89.4	91.0	79.2	54.4	29.7	103	103
56	37.7	88.8	90.5	78.8	53.7	28.7	101	101
55	37.2	88.2	90.0	78.5	53.0	27.7	100	100
54	36.8	87.7	89.5	78.2	52.4	26.7	-	-
53	36.3	87.1	89.0	77.9	51.7	25.7	-	-
52	35.9	86.5	88.0	77.5	51.0	24.7	-	-
51	35.5	86.0	87.5	77.2	50.3	23.7	-	-
50	35.0	85.4	87.0	76.9	49.7	22.7	-	-
49	34.6	84.8	86.5	76.6	49.0	21.7	-	-
48	34.1	84.3	85.5	76.2	48.3	20.7	-	-
47	33.7	83.7	85.0	75.9	47.7	19.7	-	-
46	33.3	83.1	84.5	75.6	47.0	18.7	-	-
45	32.9	82.6	84.0	75.3	46.3	17.7	-	-
44	32.4	82.0	83.5	74.9	45.7	16.7	-	-
43	32.0	81.4	82.5	74.6	45.0	15.7	-	-
42	31.6	80.8	82.0	74.3	44.3	14.7	-	-
41	31.2	80.3	81.5	74.0	43.7	13.6	-	-
40	30.7	79.7	81.0	73.6	43.0	12.6	-	-
39	30.3	79.1	80.0	73.3	42.3	11.6	-	-
38	29.9	78.6	79.5	73.0	41.6	10.6	-	-
37	29.5	78.0	79.0	72.7	41.0	9.6	-	-
36	29.1	77.4	78.5	72.3	40.3	8.6	-	-
35	28.7	76.9	78.0	72.0	39.6	7.6	-	-
34	28.2	76.3	77.0	71.7	39.0	6.6	-	-
33	27.8	75.7	76.5	71.4	38.3	5.6	-	-
32	27.4	75.2	76.0					