

Hardness Conversions

The values in the tables must be taken as approximate only and are based on DIN. 50150 (May 1957) and EURONORM 8-55 (July 1955) Values converted according to ASTM may differ.

Vickers Hardness	Brinell Hardness		Rockwell Hardness		Tensile Strength
HV	HB	Indentation (10mmball)	HRB	HRC	MPa
80	80	6.48	36.4		275
85	85	6.32	42.4		295
90	90	6.16	47.4		315
95	95	6.01	52.0		325
100	100	5.87	56.4		345
105	105	5.76	60.0		365
110	110	5.63	63.4		385
115	115	5.52	66.4		390
120	120	5.42	69.4		410
125	125	5.32	72.0		420
130	130	5.22	74.4		440
135	135	5.12	76.4		460
140	140	5.04	78.4		470
145	145	4.96	80.4		490
150	150	4.88	82.2		500
155	155	4.81	83.8		520
160	160	4.74	85.4		540
165	165	4.67	86.8		550
170	170	4.60	88.2		570
175	175	4.54	89.6		590
180	180	4.48	90.8		610
185	185	4.42	91.8		620
190	190	4.37	93.0		640
195	195	4.32	94.0		655
200	200	4.26	95.0		665

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Vickers Hardness	Brinell Hardness		Rockwell Hardness		Tensile Strength
HV	HB	Indentation (10mmball)	HRB	HRC	MPa
205	205	4.21	95.8		685
210	210	4.17	96.6		705
215	215	4.12	97.6		715
220	220	4.07	98.2		735
225	225	4.03	99.0		755
230	230	3.99		19.2	765
235	235	3.95		20.2	785
240	240	3.91		21.2	805
245	245	3.87		22.1	825
250	250	3.83		23.0	835
255	255	3.80		23.8	855
260	260	3.76		24.6	875
265	265	3.73		25.4	885
270	270	3.70		26.2	900
275	275	3.66		26.9	920
280	280	3.63		27.6	940
285	285	3.60		28.3	950
290	290	3.57		29.0	970
295	295	3.54		29.6	990
300	300	3.51		30.3	1010
310	310	3.45		31.5	1040
320	320	3.41		32.7	1080
330	330	3.36		33.8	1110
340	340	3.31		34.9	1150
350	350	3.26		36.0	1175

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HV	HB	Indentation (10mmball)	HRB	HRC	MPa
360	359	3.22		37.0	1213
370	368	3.18		38.0	1240
380	376	3.15		38.9	1269
390	385	3.11		39.8	1301
400	392	3.08		40.7	1326
410	400	3.05		41.5	1354
420	408	3.02		42.5	1385
430	415	3.00		43.2	1409
440	423	2.97		44.0	1438
450	430	2.95		44.8	1462
460	(437)	(2.92)		45.5	(1490)
470	(443)	(2.90)		46.3	(1520)
480	(450)	(2.88)		47.0	(1550)
490	(457)	(2.86)		47.7	(1580)
500	(464)	(2.84)		48.3	(1610)
510	(471)	(2.82)		49.0	(1640)
520	(478)	(2.80)		49.6	(1670)
530	(485)	(2.78)		50.3	(1700)
540	(491)	(2.76)		50.9	(1730)
550	(497)	(2.74)		51.5	(1760)
560	(504)	(2.73)		52.1	(1780)
570	(510)	(2.71)		52.7	(1810)
580	(516)	(2.69)		53.3	(1840)
590	(523)	(2.68)		53.8	(1870)
600	(529)	(2.66)		54.4	(1900)

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Vickers Hardness	Brinell Hardness		Rockwell Hardness		Tensile Strength
HV	HB	Indentation (10mmball)	HRB	HRC	MPa
610				54.9	
620				55.4	
630				55.9	
640				56.4	
650				56.9	
660				57.4	
670				57.9	
680				58.4	
690				58.9	
700				59.3	
720				60.2	
740				61.1	
760				61.9	
780				62.7	
800				63.5	
820				64.3	
840				65.0	
860				65.7	
880				66.3	
900				66.9	
920				67.5	
940				68.0	

() = Values very doubtful

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