

003 Approximate Hardness Conversion Chart for Nickel and High-Nickel Alloys (continued)

Vickers Indenter 1,5,10,30 kgf (HV)	Brinell 10mm Ball Standard 3000 kgf (HBS)	Rockwell Hardness Number								Rockwell Superficial Hardness Number					
		A Scale Diamond 60 kgf (HRA)	B Scale 1/16" Ball 100 kgf (HRB)	C Scale Diamond 150 kgf (HRC)	D Scale Diamond 100 kgf (HRD)	E Scale 1/8" Ball 100 kgf (HRE)	F Scale 1/16" Ball 60 kgf (HRF)	G Scale 1/6" Ball 150 kgf (HRG)	K Scale 1/8" Ball 150 kgf (HRK)	15N Scale Diamond 15 kgf (HR 15N)	30N Scale Diamond 30 kgf (HR 30N)	45N Scale Diamond 45 kgf (HR 45N)	15T Scale 1/16" Ball 45 kgf (HR 15T)	30T Scale 1/16" Ball 15 kgf (HR 30T)	45T Scale 1/16" Ball 45 kgf (HR 45T)
91	91	...	46	...	...	80.5	82.0	...	54.5	...	...	...	73.5	45.0	17.0
89	89	...	44	...	...	79.0	81.0	...	52.5	...	...	...	72.5	43.5	14.5
87	87	...	42	...	...	78.0	80.0	...	51.0	...	...	...	72.0	42.0	12.5
85	85	...	40	...	...	76.5	79.0	...	49.0	...	...	...	71.0	41.0	10.0
83	83	...	38	...	...	75.0	77.5	...	47.0	...	...	...	70.5	39.5	7.5
81	81	...	36	...	...	74.0	76.5	...	45.5	...	...	...	70.0	38.0	5.5
79	79	...	34	...	...	72.5	75.5	...	43.5	...	...	...	69.0	36.5	3.0
78	78	...	32	...	...	71.5	74.0	...	42.0	...	...	...	68.5	35.5	1.0
77	77	...	30	...	...	70.0	73.0	...	40.0	...	...	...	67.5	34.0	(1.5)

References:
 Hardness Testing ASM International, Metal Park OH 1987
 ASTM Designation E-140-12b

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VICKERS HARDNESS NUMBER		KNOOP HARDNESS NUMBER	
Vickers Indenter 1,5,10,30 kgf (HV)		Knoop Indenter 1000 gf (HK)	
382		436	
362		413	
344		392	
326		372	
309		352	
285		325	
266		304	
248		283	
234		267	
220		251	
209		239	
198		226	
188		215	
179		204	
171		195	
164		187	
157		179	
151		173	
145		166	
140		160	
135		154	
130		149	
126		144	
122		140	
119		136	

References:

Hardness Testing ASM International, Metals Park OH 1987

ASTM Designation E140-12b