

경 도 환 산 표

HARDNESS CONVERSION TABLE FOR METALS

Steel											Soft Metal					
Rockwell				Rockwell Superficial			Vickers	Brinell	Shore	인장강도	Rockwell		Rockwell Superficial			Vickers
HRA	HRB	HRC	HRD	15N	30N	45N	HV	HB	HS	Kgf/mm ² {N/mm ² }	HRB	HRF	15T	30T	45T	HV
60Kgf	100Kgf	150Kgf	100Kgf	15Kgf	30Kgf	45Kgf	50Kgf	3000Kgf	JIS		100Kgf	60Kgf	15Kgf	30Kgf	45Kgf	
85.6		68.0	76.9	93.2	84.4	75.4	940		97.6	-	93.5	110.0	90.0	77.5	66.0	196
85.3		67.5	76.5	93.0	84.0	74.3	920		96.4	-		109.5			65.5	194
85.0		67.0	76.1	92.9	83.6	74.2	900		95.2	-	93.0			77.0	65.0	192
84.7		66.4	75.7	92.7	83.1	73.6	880		94.0	-	92.5	109.0		76.5	64.5	190
84.4		65.9	75.3	92.5	82.7	73.1	860		92.8	-	92.0		89.5		64.0	188
84.1		65.3	74.8	92.3	82.2	72.2	840		91.5	-	91.5	108.5		76.0	63.5	186
83.8		64.7	74.3	92.1	81.7	71.8	820		90.2	-	91.0			75.5	63.0	184
83.4		64.0	73.8	91.8	81.1	71.0	800		88.9	-	90.5	108.0	89.0		62.5	182
83.0		63.3	73.3	91.5	80.4	70.2	780		87.5	-	90.0	107.5		75.0	62.0	180
82.6		62.5	72.6	91.2	79.7	69.4	760		86.2	-	89.0			74.5	61.5	178
82.2		61.8	72.1	91.0	79.1	68.6	740		84.8	-	88.5	107.0			61.0	176
81.8		61.0	71.5	90.7	78.4	67.7	720		83.3	-	88.0		88.5	74.0	60.5	174
81.3		60.1	70.8	90.3	77.6	66.7	700		81.8	-	87.5	106.5		73.5	60.0	172
81.1		59.7	70.5	90.1	77.2	66.2	690		81.1	-	87.0				59.5	170
80.8		59.2	70.1	89.8	76.8	65.7	680		80.3	-	86.0	106.0	88.0	73.0	59.0	168
80.6		58.8	69.8	89.7	76.4	65.3	670		79.6	-	85.5			72.5	58.5	166
80.3		58.3	69.4	89.5	75.9	64.7	660		78.8	-	85.0	105.5		72.0	58.0	164
80.0		57.8	69.0	89.2	75.5	64.1	650		78.0	-	84.0	105.0	87.5		57.5	162
79.8		57.3	68.7	89.0	75.1	63.5	640		77.2	-	83.5			71.5	56.5	160
79.5		56.8	68.3	88.8	74.6	63.0	630		76.4	-	83.0	104.5		71.0	56.0	158
79.2		56.3	67.9	88.5	74.2	62.4	620		75.6	-	82.0	104.0	87.0	70.5	55.5	156
78.9		55.7	67.5	88.2	73.6	61.7	610		74.7	-	81.5	103.5		70.0	54.5	154
78.6		55.2	67.0	88.0	73.2	61.2	600		73.9	-	80.5	103.0			54.0	152
78.4		54.7	66.7	81.8	72.7	60.5	590		73.1	210{2095}	80.0		86.5	69.5	53.5	150
78.0		54.1	66.2	87.5	72.1	59.9	580		72.2	206{2020}	79.0	102.5		69.0	53.0	148
77.8		53.6	65.8	87.2	71.7	59.3	570		71.3	202{1981}	78.0	102.0		68.5	52.5	146
77.4		53.0	65.4	86.9	71.2	58.6	560		70.4	199{1952}	77.5	101.5	86.0	68.0	51.5	144
77.0		52.3	64.8	86.6	70.5	57.8	550	505	69.6	195{1912}	77.0	101.0		67.5	51.0	142
76.7		51.7	64.4	86.3	70.0	57.0	540	496	68.7	190{1863}	76.0	100.5	85.5	67.0	50.0	140
76.4		51.1	63.9	86.0	69.5	56.2	530	488	67.7	186{1824}	75.0	100.0		66.5	49.0	138
76.1		50.5	63.5	85.7	69.0	55.6	520	480	66.8	183{1795}	74.5	99.5	85.0	66.0	48.0	136
75.7		49.8	62.9	85.4	68.3	54.7	510	473	65.9	179{1755}	73.5	99.0		65.5	47.5	134
75.3		49.1	62.2	85.0	67.7	53.9	500	465	64.9	174{1706}	73.0	98.5	84.5	65.0	46.5	132
74.9		48.4	61.6	84.7	67.1	53.1	490	456	64.0	169{1657}	72.0	98.0	84.0	64.5	45.5	130
74.5		47.7	61.3	84.3	66.4	52.2	480	448	63.0	165{1618}	71.0	97.5		63.5	45.0	128
74.1		46.9	60.7	83.9	65.7	51.3	470	441	62.0	160{1569}	70.0	97.0	83.5	63.0	44.0	126
73.6		46.1	60.1	83.6	64.9	50.4	460	433	61.0	156{1530}	69.0	96.5		62.5	43.0	124
73.3		45.3	59.4	83.2	64.3	49.4	450	425	60.0	153{1500}	68.0	96.0	83.0	62.0	42.0	122
72.8		44.5	58.8	82.8	63.5	48.4	440	415	59.0	149{1461}	67.0	95.5		61.0	41.0	120
72.3		43.6	58.2	82.3	62.7	47.4	430	405	58.0	144{1412}	66.0	95.0	82.5	60.5	40.0	118
71.8		42.7	57.5	81.8	61.9	46.4	420	397	56.9	140{1373}	65.0	94.5	82.0	60.0	39.0	116
71.4		41.8	56.8	81.4	61.1	45.3	410	388	55.9	136{1334}	64.0	94.0	81.5	59.5	38.0	114
70.8		40.8	56.0	81.0	60.2	44.1	400	379	54.8	131{1285}	63.0	93.0	81.0	58.5	37.0	112
70.3		39.8	55.2	80.3	59.3	42.9	390	369	53.7	127{1245}	62.0	92.6	80.5	58.0	35.5	110
69.8	110.0	38.8	54.4	79.8	58.4	41.7	380	360	52.6	123{1206}	61.0	92.0		57.0	34.5	108
69.2		37.7	53.6	79.2	57.4	40.4	370	350	51.5	120{1177}	59.5	91.2	80.0	56.0	33.0	106
68.7	109.0	36.6	52.8	78.6	56.4	39.1	360	341	50.4	115{1128}	58.0	90.5	79.5	55.0	32.0	104
68.1		35.5	51.9	78.0	55.4	37.8	350	331	49.3	112{1098}	57.0	89.8	79.0	54.5	30.5	102
67.6	108.0	34.4	51.1	77.4	54.4	36.5	340	322	48.1	109{1069}	56.0	89.0	78.5	53.5	29.5	100
67.0		33.3	50.2	76.8	53.6	35.2	330	313	47.0	105{1030}	54.0	88.0	78.0	52.5	28.0	98
66.4	107.0	32.2	49.4	76.2	52.3	33.9	320	303	45.8	103{1010}	53.0	87.2	77.5	51.5	26.5	96
65.8		31.0	48.4	75.6	51.3	32.5	310	294	44.6	100{ 981}	51.0	86.3	77.0	50.5	24.5	94
65.2	105.5	29.8	47.5	74.9	50.2	31.1	300	284	43.4	97{ 951}	49.5	85.4	76.5	49.0	23.0	92
64.8		29.2	47.1	74.6	49.7	30.4	295	280	42.8	96{ 941}	47.5	84.4	75.5	48.0	21.0	90
64.5	104.5	28.5	46.5	74.2	49.0	29.5	290	275	42.2	94{ 922}	46.0	83.5	75.0	47.0	19.0	88
64.2		27.8	46.0	73.8	48.4	28.7	285	270	41.6	92{ 902}	44.0	82.3	74.5	45.5	17.0	86
63.8	103.5	27.1	45.3	73.4	47.8	27.9	280	265	40.9	91{ 892}	42.0	81.2	73.5	44.0	14.5	84
63.5		26.4	44.9	73.0	47.2	27.1	275	261	40.3	89{ 873}	40.0	80.0	73.0	43.0	12.5	82
63.1	102.0	25.6	44.3	72.6	46.4	26.2	270	256	39.7	87{ 853}	37.5	78.6	72.0	41.0	10.0	80
62.7		24.8	43.7	72.1	45.7	25.2	265	252	39.1	86{ 843}	35.0	77.4	71.5	39.5	7.5	78
62.4	101.0	24.0	43.1	71.6	45.0	24.3	260	247	38.4	84{ 824}	32.5	76.0	70.5	38.0	4.5	76
62.0		23.1	42.2	71.1	44.2	23.2	255	243	37.8	82{ 804}	30.0	74.8	70.0	36.0	1.0	74
61.6	99.5	22.2	41.7	70.6	43.4	22.2	250	238	37.2	81{ 794}	27.5	73.2	69.0	34.0		72
61.2		21.3	41.1	70.1	42.5	21.1	245	233	36.5	79{ 775}	24.5	71.6	68.0	32.0		70
61.7	98.1	20.3	40.3	69.6	41.7	19.9	240	228	35.9	78{ 765}	21.5	70.0	67.0	30.0		68
	96.7	18.0					230	219	34.1	75{ 736}	18.5	68.5	66.0	28.0		66
	95.0	15.7					220	209	33.2	71{ 696}	15.5	66.8	65.0	25.5		64
	93.4	13.4					210	200	31.8	68{ 667}	12.5	65.0	63.5	23.0		62
	91.5	11.0					200	190	30.4	65{ 637}	10.0	63.0	62.5	20.5		60
	89.5	8.5					190	181	29.0	62{ 608}		61.0	61.0	18.0		58
	87.1	6.0					180	171	27.7	59{ 579}		58.8	60.0	15.0		56
	85.0	3.0					170	162	26.5	56{ 549}		56.5	58.5	12.0		54
	81.7	0.0					160	152	25.0	53{ 520}		53.5	57.0			52
	78.7						150	143	23.7	50{ 490}		50.5	55.5			50
	75.0						140	133	22.1	46{ 451}		49.0	54.5			49
	71.2						130	124	20.6	44{ 431}		47.0	53.5			48
	66.7						120	114	19.1	40{ 392}		45.0				47
	62.3						110	105	17.6	-		43.0				46
	56.2						100	95	16.1	-		40.0				45