

SPEED-METALS

38356 Willoughby Parkway
Willoughby, Ohio 44094

Phone: 440.951.0712
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www.speedmetals.com

HARDNESS CONVERSION CHART

ROCKWELL												TUKON KNOOP		BRINELL		ROCKWELL STANDARD	
STANDARD			SUPERFICIAL			STANDARD			SUPERFICIAL			VICKERS	SHORE	3000 KG 10 MM BALL		TENSILE STRENGTH	
C	D	A	45-N	30-N	15-N	G	B	45-T	30-T	15-T	10KG Diamond Pyramid			1000 GR & Over Diamond	Dia.	BHN	STEEL ONLY
BR/150 KG	BR/100 KG	BR/60 KG	BR/45 KG	BR/30 KG	BR/15 KG	1/16 Ball 150KG	1/16 Ball 100KG	1/16 Ball 45KG	1/16 Ball 30KG	1/16 Ball 15KG	10KG Diamond Pyramid	1000 GR & Over Diamond	Sclero-Scope Diamond	3000 KG 10 MM BALL	3000 KG 10 MM BALL	STEEL ONLY	C
BR/150 KG	BR/100 KG	BR/60 KG	BR/45 KG	BR/30 KG	BR/15 KG	1/16 Ball 150KG	1/16 Ball 100KG	1/16 Ball 45KG	1/16 Ball 30KG	1/16 Ball 15KG	10KG Diamond Pyramid	1000 GR & Over Diamond	Sclero-Scope Diamond	Dia.	BHN	+/- 2%	BR/150 KG
80	87	92	87	92	97	***	***	***	***	***	1865	***	***	***	***	***	80
79	86	92	87	92	96	***	***	***	***	***	1787	***	***	***	***	***	79
78	85	91	86	91	96	***	***	***	***	***	1710	***	***	***	***	***	78
77	84	91	85	91	96	***	***	***	***	***	1633	***	***	***	***	***	77
76	83	90	84	90	96	***	***	***	***	***	1556	***	***	***	***	***	76
75	83	90	83	89	95	***	***	***	***	***	1478	***	***	***	***	***	75
74	82	89	82	89	95	***	***	***	***	***	1400	***	***	***	***	***	74
73	81	89	81	88	95	***	***	***	***	***	1323	***	***	***	***	***	73
72	80	88	80	87	95	***	***	***	***	***	1245	***	***	***	***	***	72
71	80	87	79	87	94	***	***	***	***	***	1160	***	***	***	***	***	71
70	79	87	78	86	94	***	***	***	***	***	1076	972	***	***	***	***	70
69	78	86	77	85	94	***	***	***	***	***	1004	921	***	***	***	***	69
68	77	86	75	84	93	***	***	***	***	***	940	876	97	***	***	***	68
67	76	85	74	84	93	***	***	***	***	***	900	836	95	***	***	***	67
66	75	85	73	83	93	***	***	***	***	***	865	801	92	***	***	***	66
65	75	84	72	82	92	***	***	***	***	***	832	770	91	2.25	745	***	65
64	74	83	71	81	92	***	***	***	***	***	800	743	88	2.30	712	***	64
63	73	83	70	80	91	***	***	***	***	***	772	719	87	2.30	712	***	63
62	72	82	69	79	91	***	***	***	***	***	746	696	85	2.35	682	***	62
61	72	82	68	78	91	***	***	***	***	***	720	674	83	2.35	682	***	61
60	71	81	67	78	90	***	***	***	***	***	697	653	81	2.40	653	***	60
59	70	81	66	77	90	***	***	***	***	***	674	635	80	2.45	627	***	59
58	69	80	64	76	89	***	***	***	***	***	653	618	78	2.45	627	***	58
57	69	80	63	75	89	***	***	***	***	***	633	602	76	2.50	601	***	57
56	68	79	62	74	88	***	***	***	***	***	613	587	75	2.55	578	***	56
55	67	79	61	73	88	***	***	***	***	***	595	572	74	2.60	555	301	55
54	66	78	60	72	87	***	***	***	***	***	577	558	72	2.65	534	292	54
53	65	77	59	71	87	***	***	***	***	***	560	544	71	2.65	534	283	53
52	65	77	57	70	86	***	***	***	***	***	544	530	69	2.70	514	273	52
51	64	76	56	70	86	***	***	***	***	***	528	516	68	2.75	495	264	51
50	63	76	55	69	86	***	***	***	***	***	513	502	67	2.80	477	255	50
49	62	75	54	68	85	***	***	***	***	***	498	489	66	2.80	477	246	49
48	61	75	53	67	85	***	***	***	***	***	484	477	64	2.85	461	237	48
47	61	74	51	66	84	***	***	***	***	***	471	465	63	2.90	444	229	47
46	60	74	50	65	84	***	***	***	***	***	458	453	62	2.95	429	222	46
45	59	73	49	64	83	***	***	***	***	***	446	441	60	3.00	415	215	45
44	59	73	48	63	83	***	***	***	***	***	434	430	58	3.00	415	208	44
43	58	72	47	62	82	***	***	***	***	***	423	419	57	3.05	401	201	43
42	57	72	46	61	82	***	***	***	***	***	412	409	56	3.10	388	194	42
41	56	71	44	60	81	***	***	***	***	***	402	399	55	3.15	375	188	41
40	55	70	43	60	80	***	***	***	***	***	392	389	54	3.15	375	181	40
39	55	70	42	59	80	***	***	***	***	***	382	379	52	3.20	363	176	39
38	54	69	41	58	79	***	***	***	***	***	372	370	51	3.25	352	171	38
37	53	69	40	57	79	***	***	***	***	***	363	361	50	3.30	341	168	37
36	52	68	38	56	78	***	(109)	***	***	***	354	352	49	3.35	331	162	36
35	52	68	37	55	78	***	(109)	***	***	***	345	343	48	3.25	331	157	35
34	51	67	36	54	77	***	(108)	***	***	***	336	336	47	3.40	321	153	34
33	50	67	35	53	77	***	(108)	***	***	***	327	328	46	3.45	311	149	33
32	49	66	34	52	76	***	(107)	***	***	***	318	321	44	3.50	302	145	32
31	48	66	33	51	76	***	(106)	***	***	***	310	313	43	3.55	293	142	31
30	48	65	31	50	75	92	(106)	***	***	***	302	306	42	3.60	285	138	30
29	47	65	30	50	75	91	(105)	***	***	***	294	300	41	3.65	277	135	29
28	46	64	29	49	74	90	(104)	***	***	***	286	295	41	3.70	269	132	28
27	45	64	28	48	73	89	(103)	***	***	***	279	289	40	3.75	262	128	27
26	45	63	27	47	73	88	(103)	***	***	***	272	284	38	3.75	262	125	26
25	44	63	26	46	72	87	(102)	***	***	***	266	278	38	3.80	255	122	25
24	43	62	24	45	72	86	(101)	***	***	***	260	273	37	3.85	248	120	24
23	42	62	23	44	71	84	100	72	82	93	254	267	36	3.90	241	117	23
22	42	62	22	43	71	83	99	71	82	93	248	262	35	3.95	235	114	22
21	41	61	21	42	70	81	99	71	82	93	243	256	35	4.00	229	112	21
20	40	61	20	42	69	80	98	70	81	92	238	251	34	4.00	229	110	20

Light faced numerals (in brackets) are RB or RC values not ordinarily used.

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ROCKWELL										TUKON KNOOP		VICKERS		SHORE		RINE		ROCKWELL STANDARD	
STANDARD						SUPERFICIAL			1000 GR Diamond Pyramid	1000 GR & Over Diamond	Sclero- Scope Diamond	500 KG 10 MM BALL	TENSILE STRENGTH						
C	A	K	F	F	G	B	45-T	30-T					15-T	100 K 0 MM BALL	STEEL ONLY KPSI +/- 2%	C			
BR/150 KG	BR/60 KG	1/8 Ball 150 KG	1/8 Ball 100 KG	1/16 Ball 60 KG	1/16 Ball 150 KG	1/16 Ball 100 KG	1/16 Ball 45KG	1/16 Ball 30KG	1/16 Ball 15KG	10KG Diamond Pyramid	1000 GR & Over Diamond	Sclero- Scope Diamond	Dia	H	500 KG 10 MM BALL	STEEL ONLY KPSI +/- 2%	BR/150 KG		
(19)	61	***	***	***	79	98	70	81	92	234	245	34	#	#	***	108	(19)		
(18)	60	***	***	***	78	97	69	81	92	230	239	33	#	#	***	106	(18)		
(17)	60	***	***	***	78	97	69	81	92	226	235	33	#	#	***	104	(17)		
(16)	59	***	***	***	76	96	68	80	92	222	232	32	#	#	***	102	(16)		
(15)	59	***	***	***	74	95	67	79	92	217	226	32	#	#	***	100	(15)		
(14)	58	***	***	***	73	94	66	79	91	213	220	31	#	#	***	98	(14)		
(13)	57	***	***	***	71	93	66	78	91	207	216	30	#	#	***	96	(13)		
(12)	57	100	***	***	69	92	65	78	91	204	211	29	#	#	***	94	(12)		
(11)	57	100	***	***	69	92	65	78	91	200	209	29	#	#	***	92	(11)		
(10)	56	100	***	***	68	91	64	77	90	196	206	28	#	#	***	90	(10)		
(9)	56	100	***	***	68	91	64	77	90	192	203	28	#	#	***	88	(9)		
(8)	56	99	***	***	66	90	63	76	90	188	195	27	#	#	158	87	(8)		
(7)	55	98	***	***	64	89	62	76	90	184	191	27	#	#	150	86	(7)		
(6)	54	97	***	***	61	87	60	75	89	180	187	26	#	#	150	84	(6)		
(5)	54	97	***	***	61	87	60	75	89	177	184	26	#	#	150	82	(5)		
(4)	53	96	***	***	59	86	59	74	89	173	180	25	#	#	143	80	(4)		
(3)	53	95	***	***	58	85	58	74	88	169	176	25	#	#	143	79	(3)		
(2)	52	94	***	***	56	84	57	73	88	166	172	24	#	#	136	77	(2)		
(1)	51	93	***	***	54	83	56	72	88	163	170	24	#	#	136	76	(1)		
(3)	51	92	***	***	53	82	55	72	87	160	166	24	#	#	136	75	***		
(2)	50	91	***	***	51	81	54	71	87	153	164	23	#	#	130	74	***		
(1)	50	91	***	***	49	80	53	70	86	150	162	23	#	#	130	72	***		
***	49	90	***	***	48	79	52	70	86	147	161	22	#	#	130	70	***		
***	49	89	***	***	46	78	51	69	86	144	158	22	#	#	124	69	***		
***	48	88	***	***	44	77	50	68	86	141	155	21	#	#	124	68	***		
***	47	87	***	***	43	76	49	68	85	139	152	21	#	#	124	67	***		
***	47	86	***	100	41	75	49	67	85	137	150	20	#	#	119	66	***		
***	46	85	***	99	39	74	48	66	85	135	147	20	#	#	119	65	***		
***	46	85	***	99	38	73	47	66	85	132	145	20	#	#	114	63	***		
***	45	84	***	98	36	72	46	65	84	130	143	19	#	#	114	62	***		
***	45	83	100	98	35	71	45	64	84	127	141	19	#	#	114	61	***		
***	44	82	100	97	33	70	44	64	84	125	139	19	#	#	109	60	***		
***	44	81	99	96	31	69	43	63	83	123	137	18	#	#	109	59	***		
***	43	80	98	96	30	68	42	62	83	121	135	18	#	#	109	58	***		
***	43	79	98	95	28	67	41	62	83	119	133	17	#	#	104	57	***		
***	42	78	97	95	27	66	40	61	82	117	131	16	#	#	104	56	***		
***	42	78	96	94	25	65	39	60	82	116	129	15	#	#	104	56	***		
***	42	77	96	94	24	64	38	60	82	114	127	***	#	#	100	***	***		
***	41	76	95	93	22	63	37	59	81	112	125	***	#	#	100	***	***		
***	41	75	95	92	21	62	36	58	81	110	124	***	#	#	100	***	***		
***	40	74	94	92	19	61	35	57	81	108	122	***	#	#	96	***	***		
***	40	73	93	91	18	60	34	57	80	107	120	***	#	#	96	***	***		
***	39	72	93	91	16	59	32	56	80	106	118	***	#	#	93	***	***		
***	39	71	92	90	15	58	31	55	80	104	117	***	#	#	93	***	***		

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