

# NEW INNOVATIVE CARBIDE GRADE SPECIFICATIONS

IC Grade	CO.%	Industry Code	Rockwell 'A' Scale	Transverse Rupture Strength (TRS) PSI	Compressive Strength PSI	Density G/CM	Applications	Grain Size	Relative Wear Resistance Vol. Loss mm <sup>3</sup>
IC-6s	6%	SUB-MICRON	92.5-93.5	510,000	850,000	14.80-15.00	<b>Extremely Hard/Light Impact</b> Blades, Wear Parts	.8	3.1
IC-6	6%	C-1,2,9	91.5-92.5	525,000	710,000	14.80-15.00	<b>Excellent Wear/Light Impact</b> Seal Rings, Slitters, Planer Knives, Compacting Powder Metal, Abrasive Nozzles, Nonferrous Machining, Saw Blades	1.3	3.5
IC-9	9%	C-10	90.0-91.0	590,000	625,000	14.50-14.70	<b>Good Wear/Light Impact</b> Stamping Dies, Compacting Dies, Can Forming Dies, Necking Dies, Medium Wire Draw Dies, Shearing Knives, Ironing Rings	1.3	4.3
IC-10s	10%	SUB-MICRON	91.0-92.0	625,000	700,000	14.40-14.60	<b>Excellent Wear/Light Impact</b> Stamping Dies, Compacting Dies, Draw Dies, Rotary Dies, Round Tooling	.8	3.6
IC-311	11%	SPECIAL	88.0-89.0	545,000	610,000	14.25-14.45	<b>Good Wear/Heavy Impact W-EDM</b> Impact Punches, Extrusion Punches, Coining Dies, Swaging Dies, Draw Dies, Cold Forming	3.0	12.1
IC-13	13%	C-11,12	88.5-89.5	590,000	600,000	14.10-14.30	<b>Good Wear/Medium Impact</b> Cut Edge Rings, Slitters, Stamping Punches & Dies, Lamination Dies, Extrusion Dies, Draw Dies, Compacting Dies, Blanking Brass & Bronze	1.3	6.9
IC-15s	15%	SUB-MICRON	89.0-90.0	625,000	650,000	13.95-14.15	<b>Excellent Wear/Edge Strength</b> Lamination Dies, Coining Dies, Blanking Dies, Crush Rolls, Stamping Punches	.8	7.0
IC-15	15%	C-13	87.5-88.5	620,000	560,000	13.90-14.10	<b>Good Wear/Medium Impact</b> Scroll Dies, Stamping Dies, Lamination Dies, Ironing Dies	1.3	8.6
IC-320	20%	C-14	84.5-86.0	535,000	500,000	13.50-13.70	<b>High Impact/Heavy Shock</b> Crushing Hammers, Severe Impact Blanking, Header Dies, Difficult Coining & Swaging Dies	3.5	17.3
IC-325	25%	C-17	82.5-84.5	525,000	470,000	13.05-13.25	<b>Extreme Impact</b> Header Dies	3.5	24.6



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# INNOVATIVE CARBIDE GRADE COMPARISON CHART

Cobalt %	Industry Code	Innovative Carbide	Basic Carbide	Carbidie	Carbology	Carmet	Valenite	General Carbide	Hydro Carbide	Leech Carbide	Kenna-metal	Vista Metals	Penn United
3%	C-3 C-4		BC-03	CD-20	999 905	CA-8	VC-3	GC-103	HC-200	LC-403	K-8 K-11	VM-3	
6%	SPECIAL	<b>IC-6S</b>	BC-6S	CD-630	895	CA-306	VC-29	GC-005	HC-US06	LC-106	KF-306	VM-6M	PUC-6S
6%	C-1 C-2 C-9	<b>IC-6</b>	BC-6	CD-30	883 44-A	CA-4 CA-3	VC-21 VC-2	GC-206 GC-106	HC-290	LC-206	K-68 K-96 K-6	VM-6	PUC-6
9%	C-10	<b>IC-9</b>	BC-9	K-3135 CD-35F	779	CA-12	VC-152	GC-209	HC-400	LC-109	K-84 K-9	VM-9	PUC-9
10%	SPECIAL	<b>IC-10S</b>	BC-10S	CD-636		CA-310	VC-101	GC-010	HC-US10	LC-110	KF-310	VM-10M	PUC-10S
11%	SPECIAL	<b>IC-311</b>	BC-12C	K-3109 CD-337	115	CA-411	VC-635	GC-211	HC-410 HC-509		K-94 3833 K-3109	VM-12C VM-11C	PUC-13C PUC-11C
13%	C-11 C-12	<b>IC-13</b>	BC-11 BC-13	CD-18 CD-40	55-A	CA-10	VC-11	GC-313	HC-500	LC-112	K-82	VM-13	PUC-13
15%	SPECIAL	<b>IC-15S</b>	BC-14S	CD-650		CA-315	VC-116	GC-015	HC-US15	LC-115	KF-315	VM-15M	PUC-15S
15%	C-13	<b>IC-15</b>	BC-14 BC-15	CD-45 CD-50	55-B	CA-214 CA-11	VC-12	GC-315	HC-550 HC-600	LC-215	K-92	VM-14 VM-15	PUC-15
20%	C-14	<b>IC-320</b>	BC-20C	CD-60		CA-20	VC-13	GC-320	HC-700	LC-220	K-3520	VM-20	
25%	C-17	<b>IC-325</b>		CD-70	190	CA-225	VC-146	GC-325		LC-225	K-90	VM-25	



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