

# Grade Specifications



	Chemical Composition Weight Percent			Hardness HRA	Density g/cm <sup>3</sup>	Average Transverse Rupture Strength (psi)
	WC	Co	Other			
<b>Tungsten Carbide Grades with Cobalt Binder</b>						
<b>0.6 micron</b>						
GC-012F*	88	12		92.2 - 93.2	14.08 - 14.20	520,000
GC-015F*	85	15		90.8 - 91.8	13.79 - 13.92	605,000
<b>0.8 micron ("submicron")</b>						
GC-005	94.5	5.5		93.4 - 94.2	14.88 - 14.97	500,000
GC-010*	90	10		91.4 - 92.2	14.39 - 14.51	550,000
GC-010CR*	89	10	1	92.3 - 93.3	14.25 - 14.35	590,000
GC-015*	85	15		89.3 - 90.3	13.89 - 14.03	600,000
GC-015CR*	84	15	1	90.4 - 91.4	13.74 - 13.86	650,000
<b>1.0 micron</b>						
GC-103	96.3	3.7		92.7 - 93.5	15.12 - 15.21	480,000
GC-106	94	6		91.9 - 92.7	14.86 - 14.97	510,000
GC-109	91	9		91.0 - 91.8	14.54 - 14.66	520,000
<b>2.0 micron</b>						
GC-206	94	6		91.2 - 92.2	14.86 - 14.97	500,000
GC-209	91	9		90.2 - 91.2	14.53 - 14.65	505,000
GC-211*	89	11		89.4 - 90.4	14.33 - 14.45	530,000
<b>3.0 micron</b>						
GC-310*	90	10		89.3 - 90.3	14.46 - 14.58	515,000
GC-313*	87	13		88.1 - 89.1	14.15 - 14.27	530,000
GC-315*	85	15		87.5 - 88.5	13.95 - 14.09	540,000
GC-320*	80	20		85.6 - 86.6	13.46 - 13.64	525,000
GC-325*	75	25		83.5 - 84.7	13.03 - 13.23	520,000
GC-330*	70	30		81.6 - 82.9	12.61 - 12.82	500,000
<b>6.0 micron</b>						
GC-618*	82	18		85.2 - 86.2	13.67 - 13.81	465,000
GC-712*	88	12		87.7 - 88.7	14.25 - 14.37	510,000
GC-950*	85	15		86.4 - 87.4	13.95 - 14.09	480,000
<b>11.0 micron</b>						
GC-915*	85	15		85.6 - 86.6	13.95 - 14.09	470,000
<b>1.0 and 6.0 micron (mixed structure)</b>						
GC-606M	94	6		90.4 - 91.4	14.89 - 15.00	480,000
GC-608M	92	8		89.8 - 90.8	14.66 - 14.78	490,000
GC-610M	90	10		88.8 - 89.8	14.46 - 14.58	500,000
GC-612M	88	12		88.2 - 89.2	14.25 - 14.37	505,000

\* Available in Wire EDM Grade

Note: Micron sizes refer to the nominal grain size for all grades

## SinterHIP Process Guaranteed

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	Chemical Composition Weight Percent				Hardness HRA	Nominal Grain Size microns	Density g/cm <sup>3</sup>	Average Transverse Rupture Strength (psi)
	WC	Co	TaC	Other				
<b>Corrosion Resistant Specialty Grades</b>								
GC-010CR*	89	10		1	92.3 - 93.3	0.8	14.25 - 14.35	590,000
GC-015CR*	84	15		1	90.4 - 91.4	0.8	13.74 - 13.86	650,000
GC-813CT*	86.5	10.5	2	1	90.5 - 91.5	3.0	14.24 - 14.36	500,000
GC-411CT*	86	11	2	1	88.5 - 89.5	4.0	14.19 - 14.31	490,000
<b>WC/Co Grades with Tantalum Carbide</b>								
GC-0004*	89	7	4		91.7 - 92.7	1.0	14.72 - 14.83	450,000
GC-813CT*	86.5	10.5	2	1	90.5 - 91.5	3.0	14.24 - 14.36	500,000
GC-313T*	85	13	2		88.5 - 89.5	3.0	14.14 - 14.26	510,000
GC-0014*	73	13	14		88.3 - 89.3	3.0	14.02 - 14.14	485,000
GC-315T*	83	15	2		87.5 - 88.5	3.0	13.93 - 14.07	525,000
GC-320T*	77	20	3		85.8 - 86.8	3.0	13.44 - 13.62	500,000
GC-325T*	72	25	3		83.7 - 84.9	3.0	13.01 - 13.21	490,000
GC-411CT*	86	11	2	1	88.5 - 89.5	4.0	14.19 - 14.31	490,000
GC-613T*	84	13	3		87.4 - 88.4	6.0	14.13 - 14.25	465,000
GC-618T*	79	18	3		85.3 - 86.3	6.0	13.65 - 13.79	480,000
<b>WC/Ni Grades</b>								
GC-N061	92.5		Ni	Mo <sub>2</sub> C	91.2 - 92.0	1.0	14.72 - 14.83	480,000
GC-N101	88.5		10	1.5	89.2 - 90.0	1.0	14.30 - 14.42	495,000
GC-N121	86.5		12	1.5	88.1 - 89.1	1.0	14.11 - 14.23	500,000
<b>WC/Ni/Co Grades</b>								
GC-N129	86	10	2	Cr <sub>3</sub> C <sub>2</sub>	88.6 - 89.7	3.0	13.92 - 14.04	490,000
GC-N176	80	14.5	3	2.5	85.2 - 86.3	6.0	13.33 - 13.48	470,000
GC-N256	73	20	5	2	78.2 - 80.2	6.0	12.75 - 12.95	440,000

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