Hardness HRB HRC HB	Rm N/mm²	Fe	Ni	Cr	Co	Mo	W	Si	Mn	C	Al	Ti	Li	P	S	Mg	Zn	Cu	Others
HTA Nickel Based Alloys																			
		0.4	58.0	15.0	15.0	4.2		0.1	0.1	0.17	4.3	3.3							
			61.0	14.0	9.5	4				0.15		4							
		0.3	64.5	14.0	8.0	3.5				0.15		2.5							
		2.0	30.0	25.0	30.0														
			70.5	6.0	7.5	2	5.8			0.13	5.4	1							
		4.0	52.0	19.0	18.0	4		0.1	0.1	0.07	3	3							
40HRC	1270		56.9	19.0	12.0	6	1				2	3							
		18.0	51.0	19.0	18.0	3				0.04	0.6	1.1							
		1.0	53.0	15.0	19.0					0.1	4.4	3.4							
		0.5	55.0	18.0	15.0	1.5				0.07	2.5	5							
42HRC	1330	19.0	54.0	18.0		3				0.05	0.6	1							
	1600		55.0	18.0	14.8	3	1.2			0.035	2.5	5							
38HRC	1200	1.0	57.7	19.5	13.0	4.3				0.05	1.4	3							Zr 0.07
HTA Titanium Based Alloys																			
HRC35	1100																		
	1037	0.085																	Nb13.18 Zr13.49
HRC40	1270																		
HRC32	1000	0.12		3						0.02	3								V 15.0
HRC38	1200	0.1				15													
HRC24	820	0.1				15													
	930	< 0.4				15					3	76.0/80.8							Nb 3.0
HRC24	820	0.13									3								V 2.5
HRC32	1000	0.35		6.5		4.5				0.05	4								V 8.5 Zr 4.5
HRC36	1130	1.5									4								V 2.5 O 0.25
HRC36	1130	1.2/1.8									4.5								V 2.5 O 0.25
												55							Nb 45
HRC22	800			2							48.03	47.97							Nb 2
HRC35	1100																		
	1020	2.5									5								
HRC36	1130																		
HRC38	1200	0.3		3.5/4.5		3.5/4.5					4.5/5.5								Sn 1.5/2.5 Zr 1.5/2.5
HRC40	1270																		
HRC40	1270																		
HRC36	1130																		
HRC32	1000	0.15								0.08	6								Nb 7
				2				0.2	2		6								Sn 2 Zr 2
HRC30-34	1130	0.3								0.1	5.5/6.75								V 4
HRC32	1000	0.25								0.08	5.5/6.75								V 3.5/4.5 O 0.13
HRC30-34	1130	0.3								0.1	5.5/6.75								V 3.5/4.5 O 0.2
HRC35-39	1200	0.3								0.1	5.5/6.75								V 3.5/4.5 O 0.2

Material Guide – Key to Recommended Inserts

Material Designation

P Unalloyed Steels | P Alloyed Steels | M Stainless Steels | M PH Stainless | K Cast Irons | N Aluminum & Alloys | S High Temp. Alloys | H Hard Materials