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																			
		2.0	72.0	19.0															
			48.0	22.5	19.0														
90HRB	600	5.0	59.0	15.5	0.5	16	3.5			0.01									
		20.0	44.0	22.0	1.0														
		20.0	44.0	22.0	3.0														
90HRB	600	18.0	47.0	22.0	1.5	9	0.6												
			55.0	15.0	15.0														
29HRC	930	1.0	77.5	20.0							0.3	0.5							
320HV	1050		68.0	30.0															
32HRC	1000	7.0	72.0	16.0															
35HRC	1100	7.0	73.0	15.0				0.2	0.5	0.05	1.2	2.3			0.005				Cb 1.1 Cu 0.2
		0.5	79.3	20.0	13.0			0.2	0.5	0.08	1.5	2.5							
27-30HRC	900			18.0-20.0	9.0-11.0	9.0-10.5		0.5	0.5	0.15	0.75-1.25	2.25-2.75			0.015				
70HRB	440	1.2	66.0					0.25		0.15					0.01				
27HRC	860	1.0	66.0					0.25	0.7	0.1	2.7	0.6			0.01				
150HB	510	1.3	63.0					0.25	1	0.15									Cu 31.5
			72.6	13.5		4.5				0.12	6	0.9							
		5.0	69.9	20.0	2.0														
		5.0	52.9	20.0	18.0														
		34.0	43.8	16.5						0.06	1.2	1.2							
			56.4	20.0		6	2.5			0.03									
			61.1	9.5	15.5	9				0.17	5.5	4.7							
			48.0	24.2	19.7	1.5					1.4	3							Nb 1
320HB	1040	1.0	54.0	15.0	20.0	5		0.5	0.5	0.1	4.7	1.2							
350HB	1130	1.0	59.0	15.0	14.0	4				0.16	5	4							
170HB	570	4.0	76.0	20.0				0.45	0.45	0.45	0.1	0.35							
350HB	1130	1.5	70.0	19.5	1.0			0.2	0.55	0.08	1.4	2.4							
			65.0	25.0		10													Ce 0.03
28HRC	870	0.3	58.3	19.5	18.0					0.065	1.4	2.4							
36HRC	1130	35.6	43.0	12.5		6				0.05		2.8							B 0.015
			48.0	29.0	20.0														
		5.0	49.9	19.5	18.0			1	1	0.1	2	3.5							
85HRB	550	4.0	57.0	21.2	1.2	13.5	3	0.04	0.2	0.07				0.01					V 0.17
28HRC	870	0.7	54.9	20.0	20.0	5.85				0.06	0.45	2.15							
80HRB	510	5.0	59.5	15.5	0.5	16	3.5			0.01									
		18.5	49.0	21.8	1.5	9	0.6	0.5	0.5	0.1									
250HB	810	1.2	43.0	16.0	2.0	3.5				0.05	1.2	1.2							
			49.9	19.0	19.5	4		0.75	0.75	0.08	2.9	2.9							B 0.01
			53.0	20.0	14.0	4.5					0.4	2.3							Nb 5.0
350HB	1130	1.0	55.0	18.0	14.0	7		0.25	0.25	0.05	2.1	2							
		10.0	63.3	15.0	1.2	5.5		0.3	0.1	0.12	20	2.5							
		16.0	38.0	19.0	20.0	3.2		1	0.8	0.03	0.2	2.8							
			60.6	10.0	15.0	3				0.18	5.5	4.7							V 1.0
			52.4	11.0	20.5	3.7	2			0.04	3.4	3.6							Nb 0.9 Ta 2.4 B 0.03
			60.0	8.9	10.0	2	7			0.1	4.7	2.5							Hf 1.05 Ta 3.0
36HRC	1130	3.0	52.5	19.0	11.0	9.75				0.06	1.6	2.5							B 0.007
		3.5	54.4	14.0	15.0	6	3.5	0.2	0.1	0.05	3.8	2.5							

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