Miniature Thread Mills <62HRc

Material Group			v_c (m/min)	f_z (mm/tooth) Cutter diameter ≤ ø6.0	f_z (mm/tooth) Cutter diameter > ø6.0
P	11	Magnetic soft steels	100 (80-120)	0.03 (0.02 - 0.04)	0.05 (0.04 - 0.06)
	12	Structural steels, case carburizing steels			
H	15 16	Hardened steels 45 - 50HRc	45 (25-70)	0.04 (0.03 - 0.05)	0.06 (0.05 - 0.07)
	15 16	Hardened steels 51 - 55HRc	40 (25-60)	0.03 (0.02 - 0.04)	0.05 (0.04 - 0.06)
	15 16	Hardened steels 56 - 62HRc	35 (25-50)	0.02 (0.01 - 0.03)	0.04 (0.03 - 0.05)
M	21	Free machining stainless steel	60 (40-80)	0.03 (0.02 - 0.04)	0.05 (0.04 - 0.06)
	22	Austenitic stainless steel			
	23	Ferritic, Ferritic+Austenitic,Martensitic			
K	31	Grey cast iron soft	75 (50-100)	0.04 (0.03 - 0.05)	0.06 (0.05 - 0.07)
	32	Grey cast iron hard			
	33	Nodular graphite cast iron <200HB			
	34	Nodular graphite cast iron <300HB			
S	41	Titanium, unalloyed	40 (20-60)	0.025 (0.02 - 0.03)	0.04 (0.03 - 0.05)
	42	Titanium, alloyed <270HB			
	43	Titanium, alloyed <350HB			
	51	Nickel, unalloyed	40 (20-60)	0.025 (0.02 - 0.03)	0.04 (0.03 - 0.05)
	52	Heat resisting alloys <270HB			
	53	Heat resisting alloys <350HB			

v_c - cutting speed (m/min)
n - RPM (rev/min)
f_z - feed rate (mm/tooth)
f - feed rate (mm/rev)
z - No. of teeth
f_1 - feed at cutting edge
f_2 - feed at centre line
D - thread major diameter

To calculate RPM from cutting speed: $n = \frac{v_c \times 1000}{\pi \times ø}$

To calculate feed per revolution: $f_1 = n \times f_z \times z$

To calculate feed at tool centre line: $f_2 = \frac{f_1 \times (D - ø)}{D}$

All recommendations are based on ideal machining conditions. Adjustments may need to be made according to your set-up. The recommendations for speeds, feeds and other parameters presented in this chart are nominal recommendations and should be considered only as good starting points.