Solid Carbide
Aerospace End Mills

Recommended Speeds

Material Reference Chart and Recommended Surface Speeds

							Metric	
Type	Commercial Name	Designation	Hardness HRB HRC HB	Rm N/mm2	WC (0.15) W/cm³/min	WC (0.006) Hp/in³/min	V_C min (m/min)	V_C max (m/min)
Titanium a	Ti-5Al-2.5Sn	ATI 5-2.5	HRC36	1130	49	1,08	60	120
Titanium a	Ti-6Al-4Zr-2Mo-2Sn	ATI 6-2-4-2®	HRC28	900	31	0,67	60	130
Titanium a	Ti-6Al-4Zr-2Mo-2Sn-0.2Si	ATI 6-2-4-2Si	HRC28	900	31	0,67	60	130
Titanium a	Ti-8Al-1Mo-1V	ATI 8-1-1®	HRC35	1100	49	1,08	60	120
Titanium b	Ti-11.5Mo-6Zr-4.5Sn	-	-	-	45	0,99	35	70
Titanium b	Ti-13V-11Cr-3Al	-	-	-	45	0,99	35	70
Titanium b	Ti-3Al-8V-6Cr-4Mo-4Zr	ATI 38-644®	HRC32	1000	45	0,99	35	70
Titanium b	Ti-8Mo-8V-2Fe-3Al	-	-	-	45	0,99	35	70
Titanium b	Ti-13V-11Cr-3Al	ATI 13-11-3	HRC40	1270	70	1,53	30	60
Titanium b	Ti 10.2.3	ATI 10-2-3®	HRC35	1100	62	1,35	25	60
Titanium b	Ti-15Mo	ATI 15Mo®	HRC24	820	33	0,72	50	105
Titanium b	Ti-15-333	ATI 15-3-3-3®	HRC32	1000	45	0,99	35	70
Titanium b	Ti 45Nb	ATI 45Nb®	-	-	30	0,65	45	95
Titanium b - ab	5Al-5V-5Mo-3Cr	ATI Ti5-5-5-3 Alloy	HRC40	1270	70	1,53	30	60
Titanium ab	Ti-425	ATI 425® MIL	HRC36	1130	49	1,08	30	60
Titanium ab	Ti-6AL-4V	ATI 6-4®	HRC30-34	1130	49	1,08	60	120
Titanium ab	Ti-6Al-4V	ATI 6-4®	HRC35-39	1200	62	1,35	55	110
Titanium ab	Ti-6Al-5Zr-0.5Mo-0.25Si	-	-	-	49	1,08	50	105
Titanium ab	Ti-6Al-5Zr-4Mo-Cu-0.2Si	-	-	-	49	1,08	50	105
Titanium ab	Ti-6Al-6V-2Sn	ATI 6-6-2®	HRC35	1100	49	1,08	50	110
Titanium ab	Ti-7Al-4Mo	-	-	-	45	0,99	50	105
Titanium ab	3-2.5	ATI 3-2.5®	HRC24	820	33	0,72	60	130
Titanium ab	6-4ELI	ATI 6-4 ELI®	HRC32	1000	45	0,99	60	125
Titanium ab	6-2-4-6	ATI 6-2-4-6®	HRC36	1130	47	1,03	55	110
Titanium ab	Ti-17	ATI 17®	HRC38	1200	51	1,12	55	110
Titanium ab	Ti-4Al-4Mo-2Sn-0.5Si	ATI 4-4-2®	HRC35	1100	49	1,08	50	105
Titanium ab	Ti-4Al-4Mo-4Sn-0.5Si	-	-	-	49	1,08	50	105
Pure Titanium	Ti 99.5	ATI CP4®	HRB100	780	30	0,65	90	185
Pure Titanium	Ti 99.6	ATI CP3®	HRB90	600	30	0,65	95	205
Pure Titanium	Ti 99.7	ATI CP2®	HRB80	510	30	0,65	105	220
Pure Titanium	Ti 99.8	ATI CP1®	HRB70	430	30	0,65	115	240