

Properties of Ferro-TiC® Alloys

Grade	Carbide (Vol%)	Matrix Alloy Type	Hardness (HRC)		Maximum Working Temp (°F)	Density (g/cc)	Coefficient of Thermal Expansion (x10 ⁻⁶ in/in/°F)	Transverse Rupture Strength (x10 ³ psi)	Compressive Strength (x10 ³ psi)	Impact Strength (in-lb/in ²)	Thermal Shock (No. Cycles)	Linear Size Change Thru Heat Treat %	Comments
			Ann. Hard										
C	45	Medium Alloy Tool Steel	44	71	375	6.60	70°-375°F 1.96	216	520	323	5	0.048	Excellent vibration dampening in the annealed condition, excellent cryogenic properties. Replaces A-2 tool steel. Highly Magnetic.
CM	45	High Chrome Tool Steel	46	71	975	6.45	70°-975°F 5.71	185	482	211	2	-0.011	For warm metalworking, drawing and forming. Replaces D-2 tool steel. Magnetic.
SK	35	Impact Resistant Tool Steel	35	68	800	6.80	70°-1000°F 5.89	225	381	422	100	0.034	Excellent impact strength and wear resistance. Replaces S-7 tool steel. Magnetic.
CS-40	45	Martensitic Stainless	47	70	400	6.45	70°-700°F 2.45	149	453	148	1	0.016	High hardness with corrosion resistance of 400 series stainless steels. Magnetic.
MS-5A	41	Age Hardenable Martensitic SS	52	63	840	6.55	70°-840°F 5.47	256	415	343	9	-0.009	Excellent corrosion resistance. Excellent size stability at elevated temperatures. Replaces 17-4 PH Stainless. Magnetic.
PK	42	Maraging Steel	53	64	840	6.60	70°-840°F 2.11	200	417	421	84	-0.029	Combination of excellent transverse rupture strength, impact strength, and corrosion resistance. Good thermal shock resistance. Magnetic.
HT-6A	40	Age Hardenable Nickel Base	48	63	1800	6.80	70°-1800°F 7.38	191	285	306	11	-0.014	Excellent oxidation and corrosion resistance at high temperatures. Replaces Stellite™/Inconel™. Non-magnetic.