

Ferro-Tic® Grade HT-6A

GRADE DESCRIPTION

Ferro-Tic Grade HT-6A is an advanced metal matrix composite comprised of ultra-hard titanium carbide grains homogeneously dispersed in a nickel-based binder. In the annealed state, it can be readily machined into any desired shape using conventional tooling. HT-6A exhibits excellent corrosion resistance and toughness. HT-6A is non-magnetic, it is ideal for use in wear parts where this is a requirement.



APPLICATIONS

Ferro-Tic Grade HT-6A is especially suited for tooling that must operate at temperatures up to 1800°F. It is able to withstand severe oxidizing and corrosive environments. HT-6A is widely used as a die insert material for high temperature extrusion tooling.

CHEMICAL COMPOSITION GUIDE (weight %)

Carbide Phase	Binder Phase				
	Cr	Fe	Ti	Al	Ni
Titanium Carbide	18.0	6.0	2.0	1.0	Bal

SOLUTION ANNEALING

Temperature: 2150°F for 1 Hour,
Rapid Cool, 48-52 HRC
(material is supplied in the solution annealed + pre-aged condition)

AGE HARDENING

Temperature: 1400°F for 4 Hours,
Rapid Cool, 59-63 HRC

PROPERTIES

Density, g/cc.....	6.80
Hardness, Rc	
Solution Annealed.....	48-52
Pre-Aged.....	52-57
Aged.....	59-63
Transverse Rupture Strength.....	191
(psi x 10 ³)	
Compressive Strength.....	285
(psi x 10 ³)	
Impact Strength (charpy unnotched).....	306
(in-lbs/in ²)	
Tensile Strength.....	153
(psi x 10 ³)	
Coefficient of Thermal Expansion x 10 ⁻⁶ /in/in/°F	
70°F-900°F.....	6.09
70°F-1800°F.....	7.38
Linear Size Change	
Thru Heat Treatment, %.....	-0.014