

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				
Titanium Carbide	Cr	Fe	Ti	Al	Ni
28.0	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

POPERTIES

Density, g/cc.....6.80
Hardness, Rc
Solution Annealed.....48-52
Pre-Aged.....52-57
Aged.....59-63
Transverse Rupture Strength.....191
(psi x 103)
Compressive Strength.....285
(psi x 103)
Impact Strength.....306
(charpy unnotched) (in-lbs/in²)
Tensile Strength.....153
(psi x 103)
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