



## TiC powder basic information introduction

### TiC powder introduction:

Titanium carbide powder, Chemical formula TiC, Molecular weight 59.91, Carbon content 20.05%, Density 4.93g/cm<sup>3</sup>, Melting point: 3160°C, Boiling point 4300°C. Titanium carbide is off-white powder with cubic system structure of NaCl type. The carbide is mainly used in preparation of cermet, heat-resistant material and cemented carbide due to its high melting point, hardness and chemical stability. The wear-resistance, corrosion resistance and resistance to oxidation of hard alloy can be improved clearly when TiC (6~30%) is mixed in WC-Co cemented carbide and form TiC-WC solid solution with WC. It is more suitable to process steel products. Also we can produce cemented carbide without tungsten using Ni-Co alloy to enhance the cutting speed and precision and smoothness of processed component.

### Product application:

Titanium carbide is the typical transition metal carbide. Its key is by the ionic bond, the covalent bond and the metallic bond mix in the identical crystal structure, therefore titanium carbide has many unique performance. The crystal structure had decided the carbonized titanium has the high degree of hardness, the high MP, the wear resistance powder as well as conductive and so on essential feature. The carbonized titanium ceramics are the titanium, the zirconium, in the chromium transition metal carbide develop the broadest material. From the carbonized titanium's have conducted the extensive research powder body, the block body to the thin film. In the aluminum oxide flinty dispersed phase composition turns round in the material, turns round ceramics' effect as well take the aluminum oxide - carbonation titanium, the carbonized titanium may suppress when the agglutination aluminum oxide crystal grain growing up, hindrance fracture growth; The carbonized titanium has the good wettability with certain metals, the carbonized titanium ceramics develops quickly, the carbonized titanium is in the metal-based compound materials important intensifier, its product in the machinery, electronic, chemical, the environmental protection, the fusion reactor, the defense industry and so on many domains obtains the widespread application.

Titanium carbide may also with the tungsten carbide, the tantalum carbide, the carbonized niobium, the chromic carbide, the titanium nitride form dual, three Yuan, the quaternary compound solid solution, applies in the thermal spray coating powder material, the welding material, the flinty membranous material, the military aviation material, the hard alloy and the cermet.

**TiC powder technical data:**

GRADE	CHEMICAL COMPOSITION(max,%)									
	Total carbon	Free carbon	Impurities ( max,%)							
			Nb	Fe	Si	O	N	Na	K	Ca
LF-TiC	≥19.1	≤0.30	0.01	0.05	0.02	0.50	0.20	0.01	0.005	0.01
Particle size:0.5-500micron ,5-400mesh Particle size and chemical composition are modified on request.										