

## 铸造碳化钨

### CAST TUNGSTEN CARBIDE

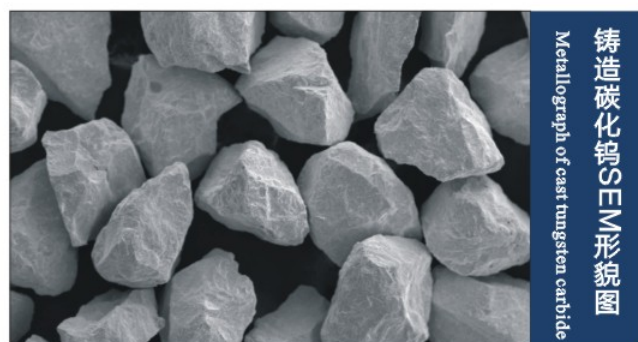
- 特性：WC与W<sub>2</sub>C的共晶体结构，由于其高熔点、高硬度、高耐磨性的特点，使其具有耐高温、耐磨、抗冲击的特性。
- 粒度范围：5.0mm-0.038mm。
- 外观：呈深灰色粉末，多角圆滑颗粒。
- Features: WC and W<sub>2</sub>C eutectic structures. Because of its high melting point, high hardness, high wears resistance, it features in high temperature resistance, wear resistance and impact resistance.
- Particle size range: 5.0mm-0.038mm.
- Appearance: Smooth multi-angular dark gray powder.

### 牌号与化学成分 GRADE & CHEMICAL COMPOSITIONS

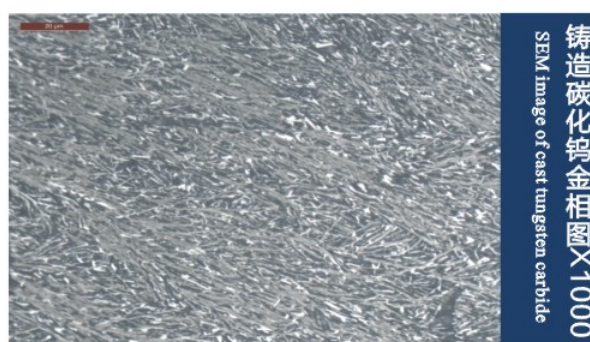
牌号 Grade	化学成分 (%) Chemical Compositions									
	W	T.C	F.C	Ti	Ni	Cr	V	Si	Fe	O
ZTC11	95~96	3.8~4.1	≤0.08	≤0.01	/	≤0.01	≤0.05	≤0.02	≤0.3	≤0.05
ZTC63Z	92~93	3.8~4.1	≤0.08	≤0.01	2.5~3.5	≤0.01	≤0.05	≤0.02	≤0.3	≤0.05
	91~92	3.8~4.1	≤0.08	≤0.01	3.5~4.5	≤0.01	≤0.05	≤0.02	≤0.3	≤0.05
	90~91	3.8~4.1	≤0.08	≤0.01	4.5~5.5	≤0.01	≤0.05	≤0.02	≤0.3	≤0.05

### 常用规格、粒度及物理性能 COMMON SPECIFICATION, PARTICLE SIZE & PHYSICAL PROPERTIES

牌号 Grade	过网筛(目) Sieve(mesh)	相应尺寸范围 Corresponsive Size Range(mm)	物理性能 Physical Properties	
			比重(g/cm <sup>3</sup> ) Specific density(g/cm <sup>3</sup> )	显微硬度(荷重100g) Microhardness(Load 100g)
ZTC1102	-5+10	4~2	15.8~16.7	1700~2500
ZTC1105	-10+20	2~0.85		
ZTC1109	-20+30	0.85~0.60		
ZTC1111	-30+40	0.60~0.425		
ZTC1115	-40+60	0.425~0.25		
ZTC1119	-60+80	0.25~0.18		
ZTC1128	-80+200	0.18~0.075		
ZTC1144	-200+400	0.075~0.038		



铸造碳化钨SEM形貌图  
Metallograph of cast tungsten carbide



铸造碳化钨金相图X1000  
SEM image of cast tungsten carbide

## 应用 APPLICATIONS

铸造碳化钨主要采用熔渗等方式熔铸在钻头基体上加工成石油钻勘用钻头。也可采用氧-乙炔焰堆焊产品需耐磨的部位，还可采用电焊、喷焊、钎焊、浸润性焊接等方法进行堆焊。在温度不高、冲击力不大的部位也可以采用环氧树脂或无机粘剂将铸造碳化钨牢固粘附在易磨损工件表面。

Cast tungsten carbide can be used as the oil drilling & exploring drill matrix by the way of melt-penetration. It can also bead-welded at the locations where wear resistance needed on the unit by oxygen-acetylene welding or by electrical welding, spray welding, brazing welding and infiltrating welding. At those locations where the working temperature is not high and impact is low, this material can firmly adhere onto the surfaces of the wear parts with the help of epoxy resins or inorganic binder.

铸造碳化钨广泛应用于矿山、石油、冶金工业、建筑机械、农业机械和钢铁等行业。如石油钻探工业中的PDC钻头工具及其它熔渗制造产品，也可用于切削式、刮刀式钻头、牙轮钻头以及机械工业中组合机床、技工中心使用的刀具等表面补强。

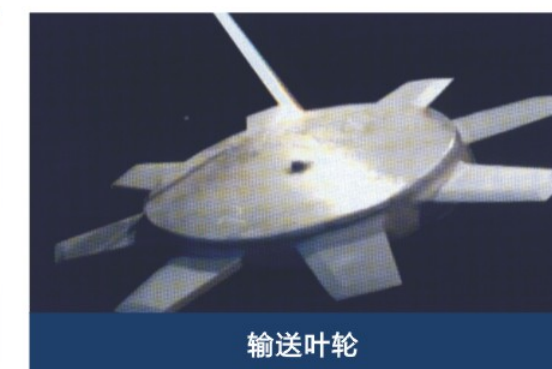
Cast tungsten carbide is widely used in mining industry, petroleum industry, metallurgy industry, construction machinery, agriculture machinery and steel industry. For example, for making and other melt-infiltration products in oil drilling & exploring industry. It can also be used for surface reinforcement of cutting drills, scraper drills, cone rock bits, and tools in machinery industry.

铸造碳化钨的应用可大大提高产品、工件承受高温和冲击的能力，而且经久耐用，进一步减轻修复劳动强度，降低成本和提高生产率。

The application of cast tungsten carbide can greatly improve heat-resistance and impact-resistance of the work piece, and prolong the work piece performance life, thus, lighting the reparation labour, lowering production cost and raising productivity.



PDC钻头



输送叶轮

