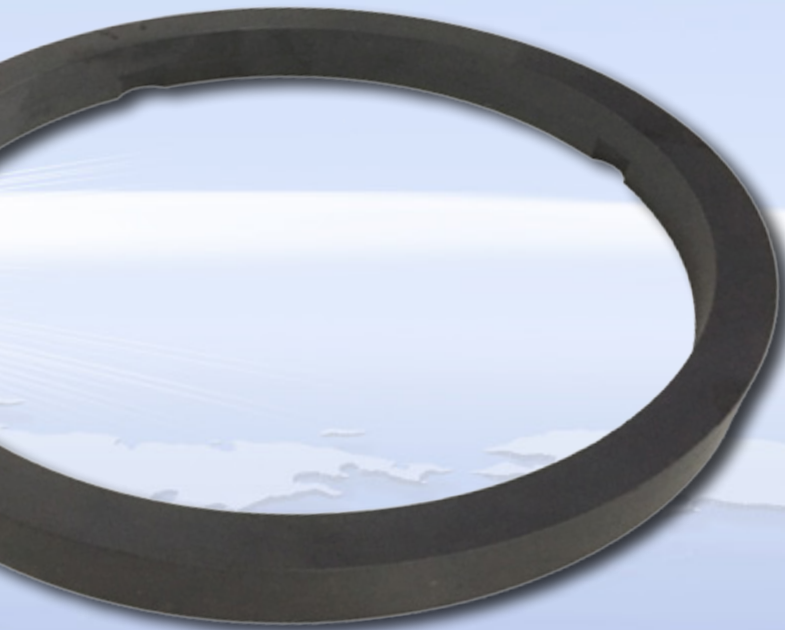
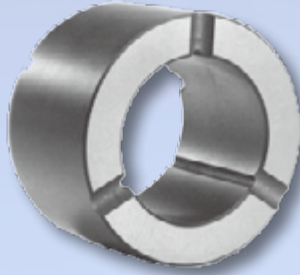


Material Data Sheet

TUNGSTEN CARBIDE



NINGBO DPM FLUID TECHNOLOGY CO., LTD
A SEALS AND BEARINGS ENGINEERING COMPANY



Material Description:

Tungsten Carbide(TC) is not an engineering ceramic material but it has even higher hardness compare to SiC and Al₂O₃. Different from engineering ceramic, it is not a brittle material which allows it to handle applications with possible impact. Along with its exceptional wear resistance, it is also a very popular material used in tribological application as mechanical seal rings, sliding bearings, mining tools, etc.

It has the advantage of:

1. Great mechanical strength.
2. Extraordinary wear resistance and hardness.
3. Ok anti-corrosion ability.
4. Great abrasion resistance.
5. Low thermal expansion rate and great thermal shock resistance.
6. Good fracture toughness.



Only applied with binder material, can the Tungsten Carbide be sintered into different shapes with good mechanical property. Usually there are two common binder material:

1. Nickel binder

Usually applied with 6%, 8%, 10% Nickel binder to bind Tungsten Carbide molecule and make the material a little softer and less brittle. Nickel is now the mostly used binder for TC because it is more economic and it also has good anti-corrosion ability.

2. Cobalt binder

Cobalt binder used to be the main binder for Tungsten Carbide but now it is mostly replaced by Nickel. Applied with 6%, 8% and 10% Cobalt, the TC material will have almost the same performance as Nickel TC. Using Cobalt is not a economic choice, but will make the TC material have better anti-corrosion ability.

Nickel binder

DPM Code	Binder	Density	Hardness	Porosity	Crystal size	Bending strength
-	NiCr %	g/cm ³	HRA	≤	um	MPa
YWN6	5.7-6.2	14.7-15.1	≥ 90	A04B04C02	1.2-1.6	≥ 1800
YWN8	7.5-8.2	14.6-14.8	≥ 89.5	A04B02C02	1.2	≥ 2000
YWN8 R1	7.5-8.2	14.-14.4	≥ 89	A04B04C04	1.6	≥ 1800
YWN8 R2	7.5-8.5	14.4-14.7	≥ 89.5	A04B04C02	1.6	≥ 1800
YWN10	10-10.8	14.4-14.6	≥ 89	A04B04C02	1.2	≥ 2000

Cobalt binder

DPM Code	Binder	Density	Hardness	Porosity	Crystal size	Bending strength
-	Co %	g/cm ³	HRA	≤	um	MPa
YG6	5.8-6.3	14.6-15	≥ 90.5	A04B04C02	1.6	≥ 1900
YG8	7.7-8.2	14.5-14.9	≥ 90	A04B04C02	1.6	≥ 2000
YG8 R1	7.5-8.5	14.3-14.6	≥ 89.5	A04B04C02	1.6	≥ 2000



DPM NINGBO DPM FLUID TECHNOLOGY CO. LTD



Tel: +86-574-88370866

Cell&Whatapp&Skype: +86 139 6784 8363

E-mail: petercui@dpmfluid.com sales@dpmfluid.com

Website: www.dpm-seal.com