Cerbide MACH600

Technical Data

Binderless Tungsten Carbide

Cerbide MACH600 is produced from a patented process combining the properties of ceramics and cemented tungsten carbide, enabling it to perform at high levels of abrasion and erosion resistance. The result is a cost effective, high-performance product that wears significantly longer in both wet and dry, low-impact applications. Cerbide's MACH600 is also significantly more resistant to acidic corrosion than cobalt or nickel bound cemented tungsten carbides.

Abrasion Resistance Dry Wheel - ASTM G65 ($1/cm^3$)	865
Hardness	
Vickers (HV1 – 1000g-*f*)	> 2,800
Rockwell A conversion equivalent	> 96.5
Knoop (HK – 100g-*f*)	> 3,400
TRS (ksi)	250
Density (grams/cc)	> 15.6
Grain Size	nanostructured WC, < 1µ
Youngs Modulus (GPa)	620
Fracture Toughness ($MPa\sqrt{m}$)	3.9
Thermal Conductivity (W/mK)	120
CTE (Coefficient of Thermal Expansion) (x 10^{-6} / °C)	4.5
Electrical Resistivity (x 10^{-6} Ohm / cm)	17
Specific Heat (cal / molK)	8.46

MADE IN USA
EXCEPTIONAL QUALITY

Corrosion Resistance

MACH600 is 8 times more resistant to acids than Nickel or Cobalt based cemented tungsten carbide matrices and corrosion appreciably drops off to near zero after 144 hours in strong acids

- MACH600 is inherently non-magnetic
- MACH600 can be readily formed by diamond tools in addition to sinker or wire EDM subtractive processes
- MACH600 can be torch, induction or atmospherically brazed to steel substrates with AWS Braze BAg 22. Lucas-Milhaupt LM Silvaloy 495 or Prince & Izant Silver Braze 49Ni4 with any "B" or "B-1" type flux is recommended

CERBIDE
14115 Seaway Road
Gulfport MS 39503

p. +1.228.871.7123
e. inquiry@cerbide.com

cerbide.com

V6-Apr-20

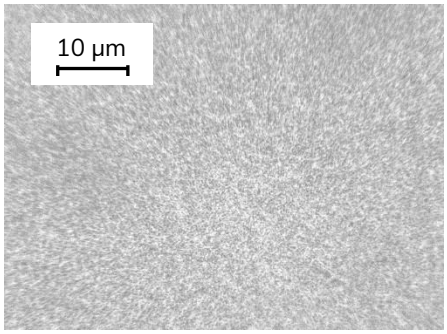
Cerbide MACH600

Technical Data

Binderless Tungsten Carbide

Cerbide MACH600 offers excellent wear & chemical resistance for applications that demand the ultimate in hardness. Components made from MACH600 offer extraordinary life that translates into bolt-on benefits like reduced maintenance, decreased downtime and lower overall cost of ownership when compared to B4C and standard Tungsten Carbide grades.

MACH600 Binderless Tungsten Carbide



MACH600 micrograph – 400x

Applications

- Nozzles for grit blasting – wet or dry
- Wear resistant components
- Water jet nozzles, water pumping hardware, orifices
- Cutting tools – round tools or ISO inserts
- Paint spray nozzles
- Draw dies – extrusion dies
- Low impact compaction dies

Material Characteristics

- Approaching theoretical density
- Binderless matrix
- Non-porous surface won't trap & react with chemicals
- Non-magnetic
- Readily brazed to other metallic substrates
- Can be polished to a mirror-like finish
- Crack resistant EDM processing properties

Let Cerbide application engineers consult with your team on design and applications where MACH600 components could benefit your operations.

14115 Seaway Road
Gulfport MS 39503

p. +1.228.871.7123
e. inquiry@cerbide.com

cerbide.com