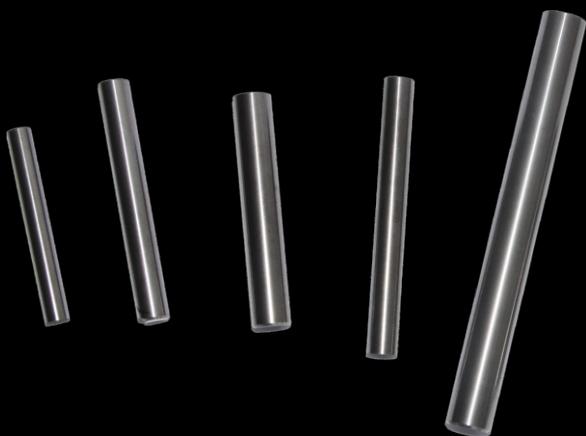




# 硬质合金棒材

Cemented Carbide Rods



24 4006 816 028

[www.metcera.com](http://www.metcera.com)



成都美奢锐新材料有限公司是一家致力于超硬材料等粉末冶金新材料研发生产销售及应用方案提供的国家高新技术企业。公司研发生产基地占地50余亩，通过引进和定制海外高端设备，现已建成年产1500万片金属陶瓷刀片、2000万支硬质合金棒料及其他耐磨损和型材的全自动内循环生产线。公司拥有外贸进出口权，业务范围遍及全球三十多个国家和地区，已成为国内金属陶瓷先行者领导者品牌和硬质合金棒料的新星，市场占有率稳列前茅。国际顶级标准的质量控制体系，丰富完善的市场产品链，系统化的解决方案，为公司产品在多种工件多种工况下的广泛应用提供了有效支撑。作为转型期“中国制造”的践行者，公司已获国家级高新技术企业、科技型技术创新基金立项企业、成都市新经济梯度培育企业、省重点新材料首批次应用示范指导目录单位等荣誉称号，并在工信部2016年创新创业大赛总决赛中闪耀夺魁。

美奢锐长期倡导技术创新，建有企业技术研发中心和成都市院士（专家）工作站，拥有多名金属陶瓷和硬质合金等粉末冶金新材料领域技术研发和应用深耕多年的专家学者工程师队伍，同时注重高分子材料、新型高性能结构及功能材料等行业人才培养和技术嫁接，具有行业领先的科研制造实力，已获得国家知识产权专利30余项。公司碳氮化钛基金属陶瓷材料制备技术经四川省科技厅鉴定，整体技术及各项指标均达国际先进标准，碳氮化钛固氮技术已达国际领先水平。

公司现已进入快速稳步发展阶段，从前沿尖端生产制造的自动化智能化到营销售后体系的网络化数字化，从工艺质量到产业层次，从产品科研创新到体系理念扩展，共步赋能工业4.0和5G时代。在公司布局全球营销网络的同时，也将持续重点投入技术研发增强自身专业领域实力，全面提升美奢锐核心竞争力，一如既往地为国内外客户提供优质领先的合作。

Chengdu Met-ceramic Advanced Materials Co.,ltd is a national high-tech enterprise dedicated to the R&D, production, sales and application solutions of superhard and powder metallurgy new materials.

Our company base covers an area of more than 35,000m<sup>2</sup>. A fully automatic internal circulation production line has been built with the capacity of 15 millions pieces of inserts, 20 millions pieces of cemented carbide rods and other wear resistant parts and profiles, by custom imported high-class equipment.

After decades of developing, our business scope covers more than 30 industrial developed countries and regions all over the world. It has become one of the leading brand of cemented carbide rods and products in the market with standing in the top list of market share.

The international top standard quality control system, rich and perfect market product chain and systematic solutions provide effective support for the wide application of the company's products in a variety of workpieces and working conditions.

Metcera has been advocating technological innovation for a long time and have a professional team of experts, scholars and engineers who have been deeply engaged in technology research and application in the field of new powder metallurgy materials and cemented carbide in careers, by which provides us industry-leading scientific research and manufacturing strength and obtaining more than 30 national intellectual property patents.

From the automation & intelligence to the networking & digitization, from the process quality to industrial level, and from product scientific research and innovation to system concept expansion, Metcera has now entered a stage of rapid and steady development.

Metcera will keep laying out our global marketing network, focus on technology R&D, enhancing our strength in professional fields, continuously provide high-quality and leading cooperation for customers domestic and aboard.



# 资质荣誉

专业认证国际领先  
Professional certification international leader



四川省瞪羚企业



高新技术企业证书



创客中国创新创业大赛一等奖

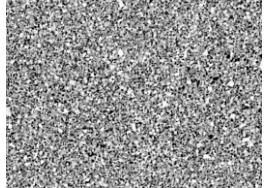
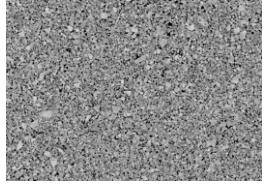
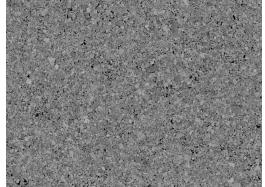
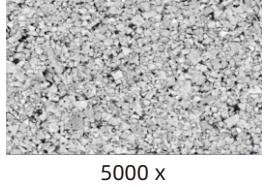


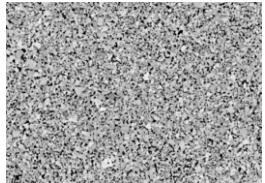
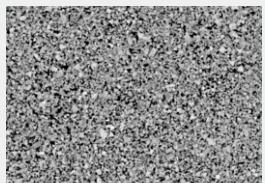
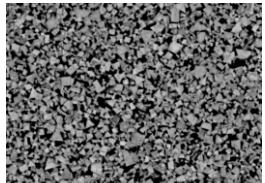
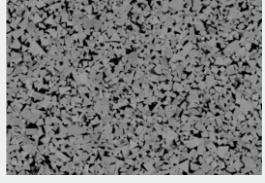
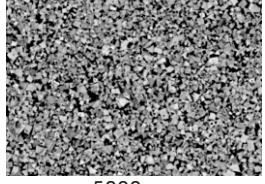
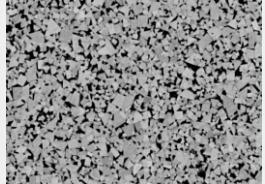
质量管理体系认证证书



中国创新创业大赛  
四川赛区一等奖

## 牌号介绍 | Grade Introduction

牌号 Grade	晶粒度 Grain Size (μm)	钴含量 Cobalt Content (wt.-%)	抗弯强度 TRS(C试样) (N/mm <sup>2</sup> )	硬度 Hardness		密度 Density (g/cm <sup>3</sup> )	显微组织 Microstructure
				HV30	HRA		
MF306U	0.2~0.3	6	3800	2180	94.9	14.7	 5000 x
	近纳米晶硬质合金，显著提升材质耐磨性，在金属基线路板和亚克力加工上有更卓越的表现。 Near-nanocrystalline carbide significantly improves the wear resistance of the material, and has better performance in metal-based circuit boards and acrylic processing.						
MF306	0.3	6	3800	2130	94.6	14.7	 5000 x
	超细晶硬质合金，优异的强度、硬度和耐磨性。推荐制作对耐磨性要求较高的PCB铣（锣）刀（刃径≥0.6mm）、雕刻刀、木工刀、牙科刀等；适合加工玻璃纤维板、金属基线路板、亚克力、塑胶、木材、义齿等材质。 Ultrafine grain size carbide with excellent strength, hardness and wear resistance. It is recommended to make PCB milling (gong) tools (blade ØD ≥ 0.6mm), engraving tools, woodworking cutters, dental tools, etc. that require high wear resistance; suitable for processing fiberglass boards, metal-based circuit boards, acrylic, plastic, wood, dentures, etc.						
MF303	0.3	3	3600	2150	94.7	15.2	 5000 x
	低粘结相合金材质，具有高硬度、高强度、抗氧化、耐腐蚀、耐磨损等性能特点，综合性能稳定；适合加工刨花板、密度板等多种材质。 Low-bond phase alloy material, with high hardness, high strength, oxidation resistance, corrosion resistance, wear resistance and other performance characteristics, has stable comprehensive performance; suitable for processing particle board, MDF and other materials.						
MF803	0.8	3	3500	1990	93.8	15.2	 5000 x
	具有高硬度、高强度、抗氧化、耐腐蚀、耐磨损等性能特点，综合性能稳定；适合加工硬木、刨花板、高密度板、中密度板等多种材质。 Low-bond phase alloy material, with high hardness, high strength, oxidation resistance, corrosion resistance, wear resistance and other performance characteristics, has stable comprehensive performance; suitable for processing particle board, MDF and other materials.						

牌号 Grade	晶粒度 Grain Size (μm)	钴含量 Cobalt Content (wt.-%)	抗弯强度 TRS(C试样) (N/mm <sup>2</sup> )	硬度 Hardness		密度 Density (g/cm <sup>3</sup> )	显微组织 Microstructure
				HV30	HRA		
MF209	0.2~0.3	9	4500	2000	94.0	14.4	 5000 x
	近纳米晶硬质合金，适用于不锈钢、钛合金、复合材料、石墨、强化塑料等高耐磨性材料精加工；在加工≥HRC55高硬度钢、高速轻切削等方面有优秀的表现。同时适合PCB线路板用钻头、铣刀等。 Near-nanocrystalline carbide is suitable for finishing stainless steel, Ti alloy, composite materials, graphite, reinforced plastics and other high wear resistance materials; it has excellent performance in processing high hardness steel(≥HRC55), high-speed light cutting, etc. It is also suitable for drills and milling cutters for PCB circuit boards.						
MF412	0.4	12	4800	1700	92.4	14.1	 5000 x
	超细晶粒合金，拥有良好的硬度和韧性，适用于精加工及HRC35°~45°合金钢、铝合金、钛合金等。 Ultrafine grain size alloy with good hardness and toughness, is suitable for finishing and HRC35°~45° alloy steel, Al alloy, Ti alloy, etc.						
MF712	0.6	12	4600	1560	91.0	14.1	 5000 x
	适用于HRC35°~45°合金钢及不锈钢、钛合金、镍基合金等耐热合金的粗加工和半精加工；在航空领域的钛合金、镍基合金粗加工方面表现尤为出色。 It is suitable for roughing and semi-finishing of HRC35°~45° alloy steel, stainless steel, Ti alloy, Ni alloy and other heat-resistant alloys; it is especially good in roughing of Ti alloy and Ni alloy in the aviation field.						
MF806	0.8	6	3800	1850	93.1	14.8	 5000 x
	专为CVD金刚石涂层设计，防止高温钴迁移，涂层结合更牢固，应用于石墨、高硅铝合金、CFK、GFK及其它纤维复合材料的加工；同时适用于加工铝镁合金、有色金属等。 It is specially designed for CVD diamond coating to prevent cobalt migration at high temperature, and the coating is more firm. It is used in the processing of graphite, high-silicon Aluminum alloy, CFK, GFK and other fiber composite materials; it is also suitable for processing Aluminum-Magnesium alloys, non-ferrous metals, etc.						
MF610	0.6	10	4200	1670	92.0	14.5	 5000 x
	适合通用型金属加工，尤其是有色金属加工、普通TC4钛合金加工等；特别适合制作钻头产品。 Suitable for general-purpose metal processing, especially non-ferrous metal processing, ordinary TC4 Titanium alloy processing, etc.; especially suitable for making drill products						
MF810	0.8	10	4200	1640	91.7	14.5	 5000 x
	金属加工方面卓越的通用性，尤其适用于HRC50°以下的铸铁、普通钢、有色金属等材质的加工；可用于制作铣刀、钻头、铰刀等。 Excellent versatility in metal processing, especially suitable for the processing of cast iron, ordinary steel, non-ferrous metals and other materials hardness below HRC50°; it can be used to make milling tools, drills, reamers, etc.						

## 牌号推荐 | Grade Selection Guide

通用切削材质推荐 General Grade Recommendation														
被加工材质 Workpiece	有色金属 Nonferrous Materials		普通钢 Common Steel		模具钢 Die Steel		不锈钢 Stainless Steel		钛合金/镍基 高温合金 Ti Alloy/Ni Alloy		铸铁 Cast Iron		石墨 Graphite	碳纤维 CFRP
牌号 Grade	粗加工 Roughing	精加工 Finishing	粗加工 Roughing	精加工 Finishing	粗加工 Roughing	精加工 Finishing	粗加工 Roughing	精加工 Finishing	粗加工 Roughing	精加工 Finishing	粗加工 Roughing	精加工 Finishing		
MF806	√												●	●
MF810	★		★	√	★		★		√		★	★		
MF209		★				√		√						√
MF412		★		★		★		★						
MF712					√				★					
MF306														√

PCB刀具、雕刻刀材质推荐 PCB tools, Gravers Grade Recommendation														
牌号 Grade	用途 Usage		被加工材料 Materials								刃径 Diameter			
	铣刀 Endmills	钻头 Drills	普通 玻璃板 glassfiber	高TG板 High Tg plate	金属基板 Metal Substrate	塑料 Plastic	亚克力 Acrylic	复合材料 Composite material	铝合金 Aluminum Alloy	小径 Minor (0.4~0.8)	中径 Medium (0.8~1.6)	大径 Major ≥1.6		
MF306U	★		√	√	★	★	★	√	√		√	★		
MF306	★	√	★	★	√	√	√	★	√		★	★		
MF209	√	★	√	√	√	√	√	√	★	★	√	√		

牌号 Grade	被加工材料 Materials						
	密度板 Fiberboard	刨花板 particle board	胶合板 plywood	硬木 hard wood	软木 cork wood	原木 Log	精雕 Engrave
MF303	★	★	★				
MF803			√	★	★		
MF306	√	√	√				√
MF806				√	√	★	
MF209				√	√		★
MF810				√	√	√	

★: 推荐 recommended    √: 适用 applicable    ●: 推荐涂层 with coating

注：牌号推荐仅供参考。刀具设计、涂层、使用工况都会影响刀具使用寿命，请以实际测试或使用情况谨慎选择材质。

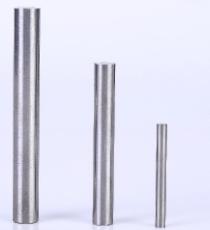
## 硬质合金棒材 Cemented Carbide Rods



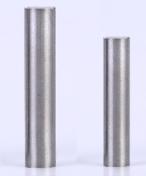
**PCB棒料**  
PCB Rod  
高品质, 高通用性  
High Quality, High universality



**PCB钻头料**  
PCB Drill Rod  
PCB钻头料, 高易用性, 低成本方案  
High Accessibility, Low cost plan

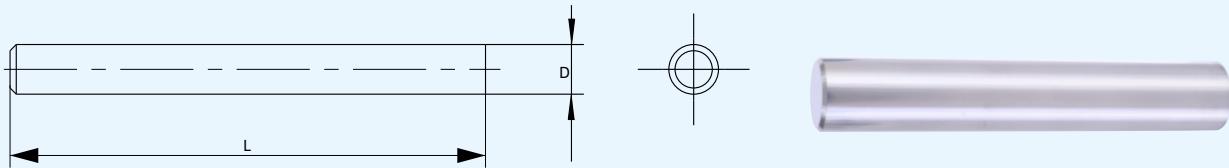


**精磨短棒**  
Finishing Grinding short rod  
牌号齐全, 尺寸精准  
Complete Grade and Size



**木工棒料**  
Wood Machining Rod  
品质稳定, 优质高效  
Stable Performance, High efficiency





### PCB微铣棒料 PCB Tiny-Milling Rod

直径 Dia	直径公差 Tol	长度 Length	长度公差 Tol
3.22	±0.02	38.3	±0.1
3.175	h6	38.3	±0.1



### PCB中钻、槽刀棒料 PCB Medium Drill, grooving rod

直径 Dia	直径公差 Tol	长度 Length	长度公差 Tol
1.6	(0/+0.15)	7~11.2	(0/+0.4)
2.1	(0/+0.15)	7~13.2	(0/+0.4)
3.25	(0/+0.15)	11.8~14.5	(0/+0.4)



### PCB预断差棒料 PCB Combined Drills and Countersink Blanks

柄径 Step Dia	直径公差 Tol	全长 Length	长度公差 Tol	头部直径 Head Dia	头部长度 head length
3.175	±0.02	38.3	±0.1	2.05	9

标准尺寸实心毛坯圆棒			
直径 Dia (mm)		长度 Length (mm)	
直径尺寸	直径公差	长度尺寸	长度公差
4	+0.2/+0.5	330	0/+5
6	+0.2/+0.5	330	0/+5
8	+0.2/+0.5	330	0/+5
10	+0.2/+0.5	330	0/+5
11	+0.2/+0.5	330	0/+5
12	+0.2/+0.6	330	0/+5
13	+0.2/+0.6	330	0/+5
14	+0.2/+0.6	330	0/+5
15	+0.2/+0.6	330	0/+5
16	+0.2/+0.6	330	0/+5
17	+0.2/+0.6	330	0/+5
18	+0.2/+0.6	330	0/+5
19	+0.2/+0.6	330	0/+5
20	+0.2/+0.6	330	0/+5
21	+0.2/+0.6	330	0/+5
22	+0.2/+0.6	330	0/+5
23	+0.2/+0.6	330	0/+5
24	+0.2/+0.6	330	0/+5
25	+0.2/+0.6	330	0/+5

支持非标订制  
 Custom Service is provided

标准尺寸精磨倒角短棒		
直径 Dia	长度 Length	倒角 chamfer
4	45	0.4
4	50	0.4
4	55	0.4
6	50	0.5
6	60	0.5
6	75	0.5
6	100	0.5
8	60	0.6
8	75	0.6
8	100	0.6
10	75	0.6
10	100	0.6
12	75	0.8
12	100	0.8
16	100	0.8
20	100	1.0
20	150	1.0

支持非标订制  
 Custom Service is provided

直径公差 Dia Tol	长度公差 Length Tol	表面粗糙度 Roughness
h5/h6	0/+1.0	Ra≤0.1

## 常用维氏硬度与洛氏硬度换算表 Hardness Conversion

HV30	HRA
780	83.3
790	83.4
800	83.6
810	83.7
820	83.9
830	84
840	84.2
850	84.3
860	84.4
870	84.5
880	84.6
890	84.7
900	84.8
910	85
920	85.1
930	85.2
940	85.3
950	85.5
960	85.6
970	85.8
980	85.9
990	86
1000	86.1
1010	86.3
1020	86.4
1030	86.5
1040	86.6
1050	86.7
1060	86.8
1070	87
1080	87.2
1090	87.3
1100	87.3
1110	87.5
1120	87.6
1130	87.7
1140	87.8
1150	87.9
1160	88
1170	88.1
1180	88.2
1190	88.2
1200	88.3
1210	88.5
1220	88.6
1230	88.7
1240	88.8

HV30	HRA
1250	88.9
1260	89.1
1270	89.2
1280	89.3
1290	89.4
1300	89.5
1310	89.6
1320	89.7
1330	89.8
1340	89.9
1350	90
1355	90
1360	90.1
1370	90.2
1380	90.3
1390	90.3
1400	90.4
1410	90.5
1420	90.6
1430	90.7
1440	90.8
1450	90.8
1460	90.9
1470	91
1480	91.1
1490	91.2
1500	91.2
1510	91.3
1520	91.4
1530	91.5
1540	91.5
1550	91.6
1560	91.6
1570	91.7
1580	91.8
1590	91.9
1600	91.9
1610	92
1620	92.1
1630	92.1
1640	92.2
1650	92.2
1660	92.3
1670	92.3
1680	92.4
1685	92.4
1690	92.5

HV30	HRA
1700	92.5
1710	92.6
1720	92.6
1730	92.7
1740	92.7
1750	92.8
1760	92.8
1770	92.9
1780	92.9
1790	93
1800	93
1810	93.1
1820	93.2
1830	93.2
1840	93.3
1850	93.3
1860	93.4
1870	93.4
1880	93.4
1885	93.5
1890	93.5
1900	93.5
1910	93.6
1920	93.6
1930	93.7
1940	93.7
1950	93.8
1960	93.8
1970	93.8
1980	93.9
1990	93.9
2000	94
2010	94
2020	94
2030	94.1
2040	94.1
2050	94.2
2060	94.2
2070	94.2
2080	94.3
2090	94.3
2100	94.3
2110	94.4
2130	94.8
2200	95.2
2250	95.4



## 成都美奢锐新材料有限公司

四川省成都市龙泉驿区车城西一路566号

全国客服电话：400 6816 028 公司电话：028 - 6519 1169 / 6519 2699



扫描二维码，关注美  
奢锐微信公众号。



浏览美奢锐官方网站，  
获取相关讯息。