



HARD-FACING MATERIALS

目录 — CATALOGUE

Factory & Company Introduction 公司简介	P1-2
WC - Thermal Spray Powder WC 基热喷涂粉	P3-5
PTA Powder 激光熔覆等离子（PTA）堆焊 / 火焰喷焊粉	P5
Carbide Grits 多棱体硬质合金颗粒	P6
Carbide Composite Welding Rods 硬质合金焊条	P7
Product Display 产品应用场景	P8



FACTORY INTRODUCTION

COMPANY INTRODUCTION

Ganzhou Stone Alloy Material Co.,Ltd. is located in the Jiangxi Dayu Tungsten Deep Processing Industrial Park, known as the "Tungsten Capital of the World." The company's factory covers an area of 7,200 square meters.

Products include: tungsten carbide hardfacing materials, polyhedral cemented carbide impact particles, polyhedral lightweight alloy particles, thermal spray powders, and YZ spherical alloy particles.

Products are suitable for various processes of thermal surfacing and thermal spray welding, and are widely used in fields such as petroleum extraction, mining, and automotive and agricultural machinery components and other fields.

1.Zigong Joint Carbide Co.,Ltd. dedicates on R&D of carbide blanks;

2. Ganzhou Stone Alloy Material Co., Ltd. produces of carbide particles and carbide composite welding rods.

3. Hainan Joint Carbide Co.,Ltd. works on sales and export of carbide material and tools.

赣州金石合金材料有限公司 坐落于“世界钨都”——江西大余钨精深加工产业园。公司厂房面积 7200 平方米。公司主导产品：硬质合金硬面材料：多棱体硬质合金破击粒，多棱体轻质合金粒，热喷涂粉体，YZ 球粒合金。产品适合各种工艺的热堆焊和热喷涂焊，广泛应用于：石油开采，矿山采掘，汽车农机配件等领域。



WC - Thermal Spray Powder

Product Introduction

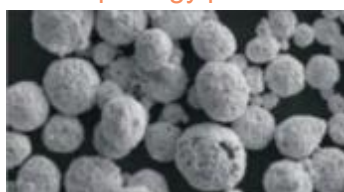
Agglomerated-sintered or sintered-crushed gray/black particles. Agglomerated-sintered particles are spherical or nearly spherical with good fluidity, while sintered-crushed particles have an irregular shape.

Maximum operating temperature: 500°C.

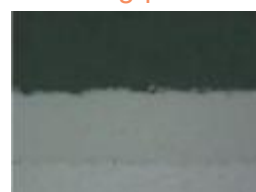
Key properties: High hardness, dense coating, resistance to abrasive wear, fretting wear, adhesive wear, and erosion wear. High fracture toughness.

WC-10Co4Cr

Morphology pictures



Coating pictures

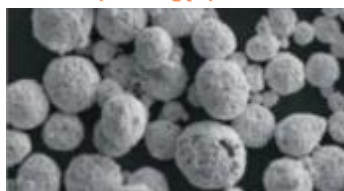


Specification	Type	Grainsize (μm)	Loose density (g/cm³)	Hall velocity (s/50g)	Application
10Co4Cr-5320	WC-Co-Cr 86/10/4	53-20	≥4	≤25	Aircraft landing gear, gate valves and ball valves, papermaking rolls, hydraulic cylinders, compressor rods, metallurgical rolling mills, mechanical parts, etc.
10Co4Cr-4520		45-20	≥4	≤25	
10Co4Cr-4515		45-15	≥4	≤25	
10Co4Cr-3810		38-10	≥4	≤18	

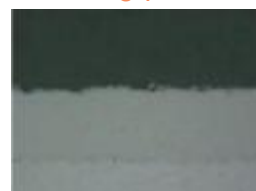
Main Ingredients(%): T.C=5.0-6.0, Co=9.0-10.5, Cr=3.0-4.5, Fe≤1.0, O≤0.5.

WC-12Co

Morphology pictures



Coating pictures

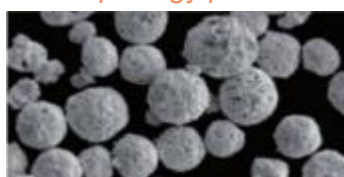


Specification	Type	Grainsize (μm)	Loose density (g/cm³)	Hall velocity (s/50g)	Application
12Co-5320	WC-Co 88/12	53-20	≥4	≤25	Mechanical parts, oil and gas equipment, metallurgical rollers, pump sealing parts, etc.
12Co-4520		45-20	≥4	≤25	
12Co-4515		45-15	≥4	≤25	
12Co-3810		38-10	≥4	≤18	

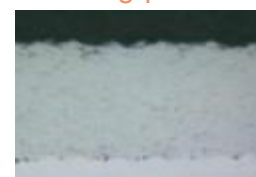
Main Ingredients(%): T.C=5.2-5.8, Co=11.5-12.5, Fe≤1.0, O≤0.5.

WC-17Co

Morphology pictures



Coating pictures



Specification	Type	Grainsize (μm)	Loose density (g/cm³)	Hall velocity (s/50g)	Application
17Co-5320	WC-Co 83/17	53-20	≥4	≤25	Aircraft landing gear, extrusion dies, wire drawing equipment, papermaking rollers, glass industry, crushing rollers, pump sealing parts, etc.
17Co-4520		45-20	≥4	≤25	
17Co-4515		45-15	≥4	≤25	
17Co-3810		38-10	≥4	≤18	

Main Ingredients(%): T.C=4.7-5.2, Co=16.5-17.5, Cr=3.0-4.5, Fe≤1.0, O≤0.5.

WC - Thermal Spray Powder

WC-10Ni

Morphology pictures



Coating pictures



Specification	Type	Grainsize (μm)	Loose density (g/cm ³)	Hall velocity (s/50g)	Application
10Ni-5320	WC-Ni 90/10	53-20	≥4	≤18	Oilfield equipment, petrochemical industry, ball valves (under oxidizing environment), plate valves, offshore equipment and parts, etc.
10Ni-4520		45-20	≥4	≤18	
10Ni-4515		45-15	≥4	≤18	
10Ni-3810		38-10	≥4	≤18	

Main Ingredients(%): T.C=5.2-6.0, Ni=9.0-11.0, Fe≤0.2, O≤0.5.

WC-12Ni

Morphology pictures



Coating pictures



Specification	Type	Grainsize (μm)	Loose density (g/cm ³)	Hall velocity (s/50g)	Application
12Ni-5320	WC-Ni 88/12	53-20	≥4	≤18	Oilfield equipment, petrochemical industry, ball valves (under oxidizing environment), plate valves, offshore equipment and parts, etc.
12Ni-4520		45-20	≥4	≤18	
12Ni-4515		45-15	≥4	≤18	
12Ni-3810		38-10	≥4	≤18	

Main Ingredients(%): T.C=5.2-5.8, Ni=11.5-12.5, Fe≤0.5, O≤0.5.

WC-17Ni

Morphology pictures



Coating pictures



Specification	Type	Grainsize (μm)	Loose density (g/cm ³)	Hall velocity (s/50g)	Application
17Ni-5320	WC-Ni 83/17	53-20	≥4	≤18	Oilfield equipment, petrochemical industry, ball valves (under oxidizing environment), plate valves, offshore equipment and parts, etc.
17Ni-4520		45-20	≥4	≤18	
17Ni-4515		45-15	≥4	≤18	
17Ni-3810		38-10	≥4	≤18	

Main Ingredients(%): T.C=4.7-5.2, Ni=16.5-17.5, Fe≤0.5, O≤0.5.

Thermal Spray Powder for Special Environments

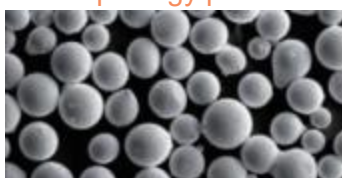
WC-15NiCr	Application
Particle size: Customized according to customer equipment and process. Main Ingredients(%): T.C=4.7-5.3, NiCr=14.5-15.5, Fe≤0.5, O≤0.5.	Ball valves (under oxidizing environment), gate hydraulic rods, transport container hydraulic rods, petrochemical industry, offshore equipment and parts, etc.
WC-20Cr-7Ni	Application
Particle size: Customized according to customer equipment and process. Main Ingredients(%): T.C=4.7-5.3, Cr=19.5-20.5, Ni=6.5-7.5, Fe≤0.5, O≤0.5.	Steel, papermaking, pumps and valves, etc.
Cr3C2-37WC-18NiCoCr	Application
Particle size: Customized according to customer equipment and process. Main Ingredients(%): Cr3C2-37WC-18NiCoCr=45/37/18	Pump valve parts, power generation boilers, biomass incineration boilers, chemical industry, etc
Cr3C2-20NiCoCr	Application
Particle size: Customized according to customer equipment and process. Main Ingredients(%): Cr3C2-NiCoCr=80/20	Gas turbine, aircraft engine, valve stem, power generation boiler, metallurgical furnace rod and hydraulic valve, etc

WC - PTA Powder

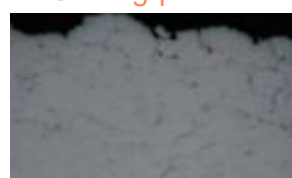
WC/Ni Carbide Powder

Spherical Casting

Morphology pictures



Coating pictures



Specification	Type	Grainsize (μm)	PTA Coating Hardness (HRC)	Application
WC40Ni60 WC50Ni50 WC60Ni40	WC40-Ni60 WC50-Ni50 WC60-Ni40	45-150	55-65	Pre-strengthening or wear repair of wear-resistant and impact-resistant surfaces.

Morphology pictures



Coating pictures



Specification	Grainsize (μm)	Loose density (g/cm³)	Hall velocity (s/50g)	Application
Ni-25 Ni-35 Ni-45 Ni-55 Ni-65	-55+20 -150+45 -45+15 -160+45 -150+45	≥4 ≥4 ≥4 ≥4 ≥4	≤18 ≤18 ≤18 ≤18 ≤18	Medium frequency melting gas atomization/water atomization preparation is used for various surface strengthening, surface protection, surface repair, etc. It has the properties of wear resistance, corrosion resistance, high temperature resistance, etc. It is widely used in petroleum, chemical, mining and other industries.
NiBSi40 NiBSi45 NiBSi50	-150+45 -150+45 -150+45	≥4 ≥4 ≥4	≤18 ≤18 ≤18	

Tungsten Carbide Grits

Product Introduction

Product Application: Used for the preparation of spray welding and surfacing materials. Applied in mining, petroleum, metallurgy, agricultural machinery, and the steel industry for wear-resistant surface pre-strengthening or wear repair.

Nominal Size: 5MM - 7MM

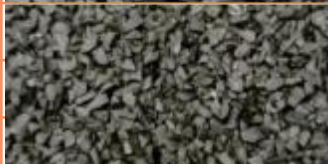


Nominal Size: 1.6MM - 3.2MM



Product Specifications

YG Series Carbide Grits: YG (YT) type tungsten carbide of the same material is crushed and then sorted into carbide particles of various sizes. It is mainly used for surface cladding (brazing) of various wear-resistant workpieces and serves as the primary raw material for carbide composite welding rods.

Grade	Nominal Size (mm)	Grits Size (mm)	Sieve Mesh	Standard Photo Reference
YG	9.5	9.5 - 6.5	Stamped Sieve	
YG	8	8 - 6.5	Stamped Sieve	
YG	6.5	6.5 - 5	Stamped Sieve	
YG	5	5 - 3	Stamped Sieve	
YG	3	3 - 2	Stamped Sieve	
YG	10Mesh	10 - 18Mesh (0.88-2)	10Mesh Sieve	
YG	18Mesh	18 - 30Mesh (0.59-0.88mm)	18Mesh Sieve	
YG	30Mesh	30 - 50Mesh (0.3-0.59mm)	30Mesh Sieve	

YN Series Carbide Grits: Multi-element alloy particles primarily composed of tungsten carbide, designed to meet users' specific wear resistance requirements. They are mainly used for surface surfacing (brazing) of various wear-resistant workpieces and for casting wear-resistant matrices.

Grade	Nominal Size (mm)	Grits Size (mm)	Standard Photo Reference
YN-1.0	1	0.8 - 1.4	
YN-2.0	2	1.0 - 3.0	
YN-4.0	4	3.0 - 5.0	
YN-6.0	6	5.0 - 6.5	

Carbide Composite Welding Rods

Product Introduction

Product Application: Used for surfacing severely worn or cut workpieces in industries such as petroleum, mining, geology, and construction, Typical applications include milling shoes, grinding shoes, centralizers, reamers, downhole drilling tools, and hydraulic cutters.



Product Specifications

YG Series Tungsten Carbide Composite Welding Rods are made by mixing granular tungsten carbide particles as the hard phase with copper alloy or nickel alloy as the bonding phase, then undergoing high-temperature sintering.

Grade	YG series
Granular Particles	WC - Co Tungsten carbide
Hardness	HRA 89.5-91
Rod Overall Length (MM)	440MM - 450MM
Rod Diameter (MM)	10-15MM
Carbide Grits Content	70% - 60% (7:3 or 6:4)
Two Types	Composite rod with copper matrix alloy / LT
	Composite rod with nickel matrix alloy / LN

Grade	Nominal Size (mm)	Grits Size (mm)	Welding Rod Size and Weight	Note
LT / LN-3.2	3.2	1.6 - 3.2	(500g±5g/440±10mm) / pcs	LT: Composite rod with copper matrix alloy LN: Composite rod with nickel matrix alloy
LT / LN-4.8	4.8	3.2 - 4.8	(500g±5g/440±10mm) / pcs	
LT / LN-6.4	6.4	4.8 - 6.4	(500g±5g/440±10mm) / pcs	
LT / LN-8.0	8.0	6.4 - 8.0	(500g±5g/440±10mm) / pcs	
LT / LN-9.5	9.5	8.0 - 9.5	(500g±5g/440±10mm) / pcs	
LT / LN-11.0	11.0	9.5 - 11.0	(500g±5g/440±10mm) / pcs	

Carbide Sintered Welding Rod

Product Introduction

Product Application: Used for surfacing severely worn or cut workpieces in industries such as petroleum, mining, geology, and construction, Typical applications include milling shoes, grinding shoes, centralizers, reamers, downhole drilling tools, and hydraulic cutters.



Product Specifications

Grade	Rod Length (mm)	Rod Diameter (mm)	Hard Phase Material
LN-103	550	3 / 4 / 5 / 6	Cast tungsten carbide and spheroidal alloys
LN-203	550	3 / 4 / 5 / 6	Spheroidal tungsten carbide and spheroidal alloy
LN-303	550	3 / 4 / 5 / 6	Spherical high entropy alloy

Product Display

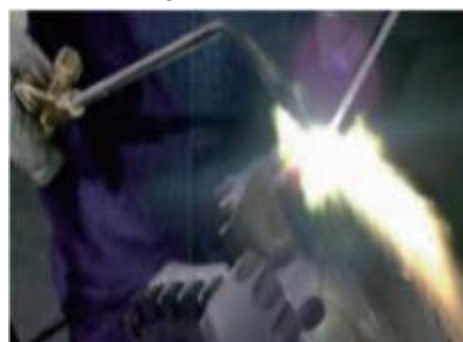


Flux-cored Electrode

Product Introduction

Product Application: Cold-rolled steel strip tube is filled with 60%-70% cast tungsten carbide hard phase. Applied via oxy-acetylene manual surfacing, the deposit reaches 2200HV_{0.1} hardness with superior abrasive wear resistance.

The welding layer deposited by this rod exhibits an excellent wear resistance, which is highly recommended to apply in the work pieces of road construction, mine exploitation, oil and deep drilling , hammer for feed crusher etc.

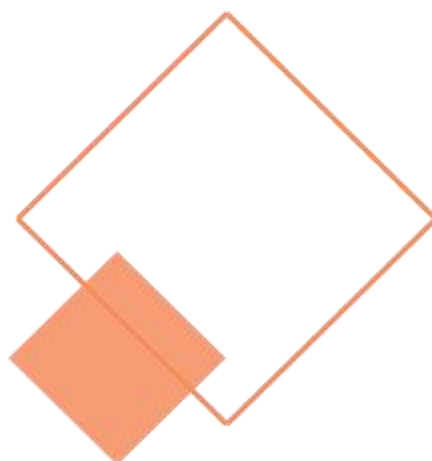


Product Specifications

Hard Phase	Cast Tungsten Carbide
Rod Diameter (MM)	Φ3 / Φ4 / Φ6 / Φ7 mm
Rod Length (MM)	480mm - 500mm
Hard Phase Filling Ratio	60% -70%
Hard Phase Mesh	60-80 Mesh

Product Application Display





CONTACT US

TEL: +86 17780715282

EMAIL: judy@jointcarbide.com

WEB: www.jointcarbide.com (coming soon)

OFFICE ADD: W3-1202B No.1700 North Section of Tianfu, Chengdu City, China.

FACTORY ADD: Cemented Carbide Industrial Park, Xinhua industrial district, Dayu County, Jiangxi Province, China.