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Vacuum sintering furnace



Carbon & sulfur analyzer



Atomic absorption spectroscopy



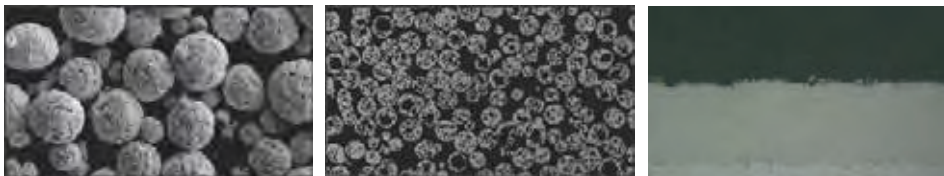
Sieve shaker



Spray drying tower

ZTC HARD-FACING MATERIAL

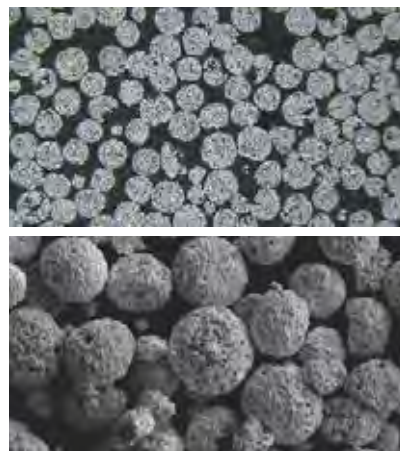
Thermal Spraying Materials



WC-12Co THERMAL SPRAY POWDER

Description

- ⊙ Agglomerated and sintered or sintered & crushed gray/dark particles; Agglomerated and sintered powders are spherical or nearly spherical with good flowability; Sintered and crushed powders are irregularly;
- ⊙ Max. operating temperature 500°C;
- ⊙ Density coatings with high hardness, high abrasive, erosion /corrosion wear resistance;
- ⊙ Excellent fracture toughness;
- ⊙ Mainly used in mechanical parts, oil and gas equipment, metallurgical roller and pump seal units, etc.



Typical cross-section and surface morphology of WC-12Co thermal spray powder

Grade & Chemical Composition

Grade	T.C (%)	Co (%)	Fe (%)	O (%)
ZTC42	5.2-6.0	11.5-12.5	≤1.0	≤0.5
ZTC42D	5.2-6.0	11.5-12.5	≤0.15	≤0.5

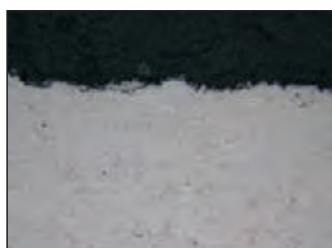
PS: "D" is spherical or nearly spherical thermal spray powder.

Specification & Physical Properties

Spec.	Type	Size Fraction (μm)	Apparent Density (g/cm ³)	Flow Rate (s/50g)	Application
ZTC4251	WC-Co 88/12 Sintered and Crushed	53-20	≥4	≤25	<ul style="list-style-type: none"> ⊙ HVOF (JP5000、JP8000/DJ2600、DJ2700/Jet Kote / Woka Jet/K2) ⊙ HVOF ⊙ APS
ZTC4253		45-20	≥4	≤25	
ZTC4252		45-15	≥4	≤25	
ZTC4251D	WC-Co 88/12 Agglomerated and sintered	53-20	≥4	≤18	
ZTC4253D		45-20	≥4	≤18	
ZTC4252D		45-15	≥4	≤18	
ZTC4281D		45-11	≥4	≤18	
ZTC4254D		38-10	≥4	≤18	
ZTC4282D		30-10	≥4	≤18	

PS: Supply customized particle size distribution powder.

Coating Deposited and Properties



Cross-section metallograph of WC-12Co coatings

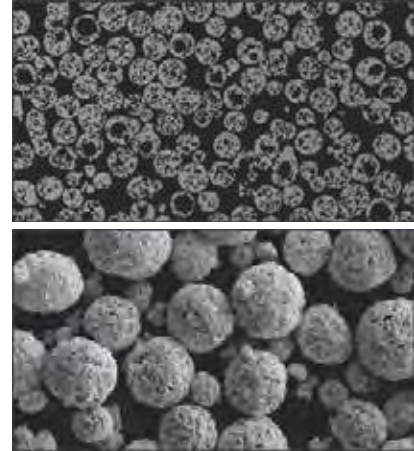
Recommended Spray Parameters(HVOF)	
Material	WC-12Co
Manufacturing	Agglomerated and sintered
Size fraction(μm)	45~15
Spray Gun	JP5000
Nozzle(inch)	6
Kerosene(L/h)	22.7
Oxygen(L/min)	944
Carrier gas Ar(L/min)	7.5
Powder feed rate(g/min)	70~100
Spraying distance(mm)	350~380

Coatings Properties	
Hardness (HV _{0.05})	1100~1300
Bonding strength (MPa)	>70 MPa
Deposition efficiency (%)	40~50%
Porosity (%)	<1 %

WC-17Co THERMAL SPRAY POWDER

Description

- ⊙ Agglomerated and sintered or sintered and crushed gray/dark particles; Agglomerated and sintered powders are spherical or nearly spherical with good flowability; Sintered and crushed powders are irregularly;
- ⊙ Max.operating temperature 500℃;
- ⊙ Density coatings with high hardness, good abrasion ,fretting, adhesion and erosion wear resistance;
- ⊙ Higher fracture toughness than WC-12Co;
- ⊙ Used in aircraft landing gear,extrusion dies, wire drawing equipment, paper roller, glass industry, crushing roller and pump seal parts, etc.



Typical cross-section and surface morphology of WC-17Co thermal spray powder

Grade & Chemical Composition

Grade	T.C (%)	Co (%)	Fe (%)	O (%)
ZTC43	4.7-5.2	16.5-17.5	≤1.0	≤0.5
ZTC43D	4.7-5.2	16.5-17.5	≤0.15	≤0.5

PS: “D” is spherical or nearly spherical thermal spray powder.

Specification & Physical Properties

Spec.	Type	Size Fraction (μm)	Apparent Density (g/cm ³)	Flow Rate (s/50g)	Application
ZTC4351	WC-Co 83/17 Sintered and Crushed	53-20	≥4	≤25	<ul style="list-style-type: none"> ⊙ HVOF (JP5000、JP8000/DJ2600、DJ2700/Jet Kote / Woka Jet/K2) ⊙ HVOF ⊙ APS
ZTC4353		45-20	≥4	≤25	
ZTC4352		45-15	≥4	≤25	
ZTC4351D	WC-Co 83/17 Agglomerated and sintered	53-20	≥4	≤18	
ZTC4353D		45-20	≥4	≤18	
ZTC4352D		45-15	≥4	≤18	
ZTC4381D		45-11	≥4	≤18	
ZTC4354D		38-10	≥4	≤18	
ZTC4382D		30-10	≥4	≤18	

PS: Supply customized particle size distribution powder.

Coating Deposited and Properties



Cross-section metallograph of WC-17Co coatings

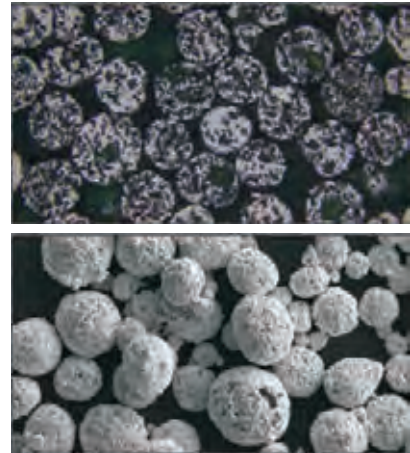
Recommended Spray Parameters(HVOF)	
Material	WC-17Co
Manufacturing	Agglomerated and sintered
Size fraction(μm)	45~15
Spray Gun	JP5000
Nozzle(inch)	6
Kerosene(L/h)	22.7
Oxygen(L/min)	944
Carrier gas Ar(L/min)	7.5
Powder feed rate(g/min)	70~100
Spraying distance(mm)	350~380

Coatings Properties	
Hardness (HV _{0.05})	950~1200
Bonding strength (MPa)	>70 MPa
Deposition efficiency (%)	45~55%
Porosity (%)	<1 %

WC-10Co4Cr THERMAL SPRAY POWDER

Description

- ⊙ Agglomerated and sintered or sintered and crushed gray/dark particles; Agglomerated and sintered powders are spherical or nearly spherical with good flowability; Sintered and crushed powders are irregularly;
- ⊙ Max. operating temperature 500°C;
- ⊙ Density coatings with high hardness, high abrasion and erosion wear resistance;
- ⊙ As a replacement for hard chrome plating;
- ⊙ Co/Cr is better than Co in wetting environment, with better corrosion resistance;
- ⊙ Mainly used in aircraft landing gear, gate valve, ball valve, paper roller, hydraulic cylinder, compressor rod, metallurgical roller and mechanical parts, etc.



Typical cross-section and surface morphology of WC-10Co4Cr thermal spray powder

Grade & Chemical Composition

Grade	T.C (%)	Co (%)	Cr (%)	Fe (%)	O (%)
ZTC45	5.2-6.0	9.1-10.1	3.0-4.5	≤1.0	≤0.5
ZTC45D	5.2-6.0	9.1-10.1	3.0-4.5	≤0.15	≤0.5

PS: "D" is spherical or nearly spherical thermal spray powder.

Specification & Physical Properties

Spec.	Type	Size Fraction (μm)	Apparent Density (g/cm ³)	Flow Rate (s/50g)	Application
ZTC4551	WC-Co-Cr 86/10/4 Sintered and Crushed	53-20	≥4	≤25	<ul style="list-style-type: none"> ⊙ HVOF (JP5000、JP8000/DJ2600、DJ2700/Jet Kote / Woka Jet/K2) ⊙ HVOF ⊙ APS
ZTC4553		45-20	≥4	≤25	
ZTC4552		45-15	≥4	≤25	
ZTC4551D	WC-Co-Cr 86/10/4 Agglomerated and sintered	53-20	≥4	≤18	
ZTC4553D		45-20	≥4	≤18	
ZTC4552D		45-15	≥4	≤18	
ZTC4581D		45-11	≥4	≤18	
ZTC4554D		38-10	≥4	≤18	
ZTC4582D		30-10	≥4	≤18	

PS: Supply customized particle size distribution powder.

Coating Deposited and Properties



Cross-section metallograph of WC-10Co4Cr coatings

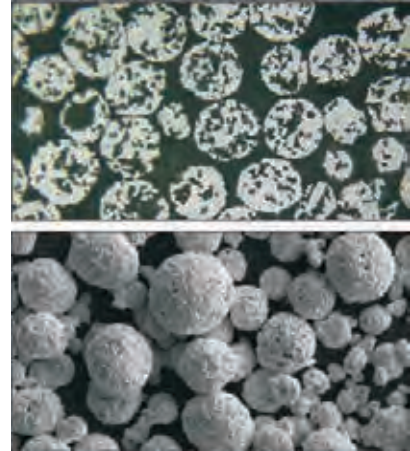
Recommended Spray Parameters(HVOF)	
Material	WC-10Co4Cr
Manufacturing	Agglomerated and sintered
Size fraction(μ m)	45~15
Spray Gun	JP5000
Nozzle(inch)	6
Kerosene(L/h)	24
Oxygen(L/min)	944
Carrier gas Ar(L/min)	7.5
Powder feed rate(g/min)	70~80
Spraying distance(mm)	340~380

Coatings Properties	
Hardness (HV _{0.05})	1150~1400
Bonding strength (MPa)	>70 MPa
Deposition efficiency (%)	40~55 %
Porosity (%)	<1 %

WC-9Co5Cr1Ni THERMAL SPRAY POWDER

Description

- ⊙ Agglomerated and sintered spherical or nearly spherical gray/dark powders with good flowability ;
- ⊙ Max.operating temperature 500℃;
- ⊙ NiCoCr is better than CoCr in erosion resistance, especially in wetting or acidic enviroment;
- ⊙ Density coatings with high hardness, high abrasion, erosion/corrosion wear resistance;
- ⊙ Mainly used in paper making roller, seal pump, hydraulic cylinder, mud pump piston rod and petrochemical equipment, etc.



Typical cross-section and surface morphology of WC-9Co5Cr1Ni thermal spray powder

Grade & Chemical Composition

Grade	T.C(%)	Co(%)	Cr(%)	Ni(%)	Fe(%)	O(%)
ZTC46D	5.1-5.8	8.5-9.5	4.5-5.5	0.8-1.2	≤0.3	≤0.5

PS: "D" is spherical or nearly spherical thermal spray powder.

Specification & Physical Properties

Spec.	Type	Size Fraction (μm)	Apparent Density (g/cm ³)	Flow Rate (s/50g)	Application
ZTC4651D	WC-Co-Cr-Ni 85/9/5/1 Agglomerated and Sintered	53-20	≥4	≤18	⊙ HVOF (JP5000、 JP8000/DJ2600、 DJ2700/Jet Kote / Woka Jet/K2)
ZTC4653D		45-20	≥4	≤18	
ZTC4652D		45-15	≥4	≤18	
ZTC4681D		45-11	≥4	≤18	⊙ HVOF ⊙ APS
ZTC4654D		38-10	≥4	≤18	
ZTC4682D		30-10	≥4	≤18	

PS: Supply customized particle size distribution powder.

Coating Deposited and Properties



Cross-section metallograph of WC-9Co5Cr1Ni coatings

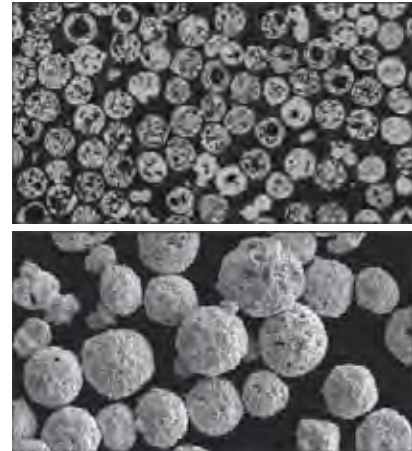
Recommneded Spray Parameters(HVOF)	
Material	WC-9Co5Cr1Ni
Manufacturing	Agglomerated & Sintered
Size fraction(μm)	45~15
Spray Gun	K2
Nozzle(inch)	6
Kerosene(L/h)	25
Oxygen(L/min)	900
Carrier gas Ar(L/min)	7.5
Powder feed rate(g/min)	70~80
Spraying distance(mm)	320~380

Coatings Properties	
Hardness (HV _{0.3})	1100~1300
Bonding strength (MPa)	>70 MPa
Deposition efficiency (%)	40~52 %
Porosity (%)	<1 %

WC-10Ni THERMAL SPRAY POWDER

Description

- ⊙ Agglomerated and sintered spherical or nearly spherical gray/dark powders with good flowability;
- ⊙ Max.operating temperature 500℃;
- ⊙ Density coatings with high hardness, high abrasion, fretting, adhesion, erosion and corrosion wear resistance;
- ⊙ Nickel is better than Cobalt in wetting environment with highly corrosion resistance;
- ⊙ Non magnetic;
- ⊙ Mainly used in oil field equipment (highly corrosion resistance), petrochemical industry, ball valve (oxidizing environment), plate valve, offshore equipment and parts, etc.



Typical cross-section and surface morphology of WC-10Ni thermal spray powder

Grade & Chemical Composition

Grade	T.C (%)	Ni (%)	Fe (%)	O (%)
ZTC47D	5.3-5.8	9.0-11.0	≤0.2	≤0.5

PS: “D” is spherical or nearly spherical thermal spray powder.

Specification & Physical Properties

Spec.	Type	Size Fraction (μm)	Apparent Density (g/cm ³)	Flow Rate (s/50g)	Application
ZTC4751D	WC-Ni 90/10 Agglomerated and sintered	53-20	≥4	≤18	⊙ HVOF (JP5000、 JP8000/DJ2600、 DJ2700/Jet Kote / Woka Jet/K2) ⊙ HVOF ⊙ APS
ZTC4753D		45-20	≥4	≤18	
ZTC4752D		45-15	≥4	≤18	
ZTC4781D		45-11	≥4	≤18	
ZTC4754D		38-10	≥4	≤18	
ZTC4782D		30-10	≥4	≤18	

PS: Supply customized particle size distribution powder.

Coating Deposited and Properties



Cross-section metallograph of WC-10Ni coatings

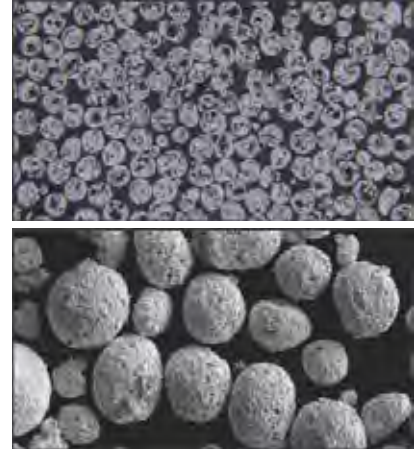
Recommended Spray Parameters(HVOF)	
Material	WC-10Ni
Manufacturing	Agglomerated and sintered
Size fraction(μm)	45~15
Spray Gun	JP5000
Nozzle(inch)	4
Kerosene(L/h)	24
Oxygen(L/min)	900
Carrier gas Ar(L/min)	8.5
Powder feed rate(g/min)	80~100
Spraying distance(mm)	340~380

Coatings Properties	
Hardness (HV _{0.05})	1050~1250
Bonding strength (MPa)	>70 MPa
Deposition efficiency (%)	40~50 %
Porosity (%)	<1 %

WC-12Ni THERMAL SPRAY POWDER

Description

- ⊙ Agglomeration and sintered spherical or nearly spherical gray/dark powders with good flowability ;
- ⊙ Max.operating temperature 500℃;
- ⊙ Density coatings with high hardness, high abrasion, fretting , adhesion wear, erosion and corrosion wear resistance;
- ⊙ Ni has better corrosion resistance than Co, especially for wetting and corrosion environment;
- ⊙ Non magnetism;
- ⊙ Mainly used in oil field equipment (highly corrosion resistance), petrochemical industry, ball valve (oxidizing environment), plate valve, offshore equipment and parts, etc.



Typical cross-section and surface morphology of WC-12Ni thermal spray powder

Grade & Chemical Composition

Grade	T.C (%)	Ni (%)	Fe (%)	O (%)
ZTC91D	5.2-5.6	11.5-12.5	≤0.2	≤0.5

PS: "D" is spherical or nearly spherical thermal spray powder.

Specification & Physical Properties

Spec.	Type	Size Fraction (μm)	Apparent Density (g/cm ³)	Flow Rate (s/50g)	Application
ZTC9151D	WC-Ni 88/12 Agglomerated and Sintered	53-20	≥4	≤18	<ul style="list-style-type: none"> ⊙ HVOF (JP5000、JP8000/DJ2600、DJ2700/Jet Kote / Woka Jet/K2) ⊙ HVOF ⊙ APS
ZTC9153D		45-20	≥4	≤18	
ZTC9152D		45-15	≥4	≤18	
ZTC9181D		45-11	≥4	≤18	
ZTC9154D		38-10	≥4	≤18	
ZTC9182D		30-10	≥4	≤18	

PS: Supply customized particle size distribution powder.

Coating Deposited and Properties



Cross-section metallograph of WC-12Ni coatings

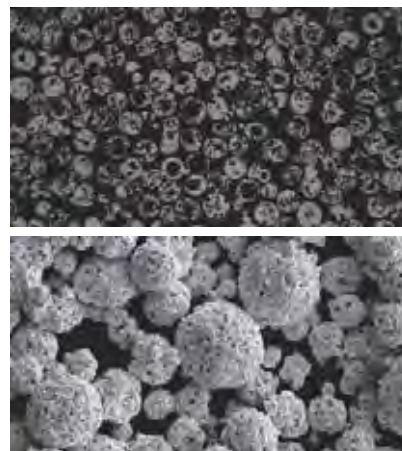
Recommended Spray Parameters(HVOF)	
Material	WC-12Ni
Manufacturing	Agglomerated and sintered
Size fraction (μm)	45~15
Spray Gun	JP5000
Nozzle(inch)	4
Kerosene(L/h)	24
Oxygen(L/min)	900
Carrier gas Ar(L/min)	8.5
Powder feed rate(g/min)	70~100
Spraying distance(mm)	340~380

Coatings Properties	
Hardness (HV _{0.3})	1000~1200
Bonding strength (MPa)	>70 MPa
Deposition efficiency (%)	40~50 %
Porosity (%)	<1 %

WC-17Ni THERMAL SPRAY POWDER

Description

- ⊙ Agglomeration and sintered spherical or nearly spherical gray/dark powders with good flowability ;
- ⊙ Max.operating temperature 500℃;
- ⊙ Density coatings with high hardness, high abrasion wear and fretting wear, high adhesive wear and erosion wear and corrosion wear resistance;
- ⊙ Ni has better corrosion resistance than Co, especially for wetting and corrosion environment;
- ⊙ Non magnetism;
- ⊙ Mainly used in oil field equipment (highly corrosion resistance), petrochemical industry, ball valve, offshore equipment and parts, etc.



Typical cross-section and surface morphology of WC17Ni thermal spray powder

Grade & Chemical Composition

Grade	T.C (%)	Ni (%)	Fe (%)	O (%)
ZTC92D	5.0-5.3	16.5-17.5	≤0.2	≤0.5

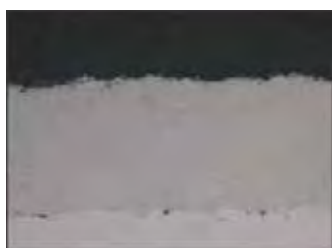
PS: “D” is spherical or nearly spherical thermal spray powder.

Specification & Physical Properties

Spec.	Type	Size Fraction (μm)	Apparent Density (g/cm ³)	Flow Rate (s/50g)	Application
ZTC9251D	WC-Ni 83/17 Agglomerated and sintered	53-20	≥4	≤18	<ul style="list-style-type: none"> ⊙ HVOF (JP5000、JP8000/DJ2600、DJ2700/Jet Kote / Woka Jet/K2) ⊙ HVOF ⊙ APS
ZTC9253D		45-20	≥4	≤18	
ZTC9252D		45-15	≥4	≤18	
ZTC9281D		45-11	≥4	≤18	
ZTC9254D		38-10	≥4	≤18	
ZTC9282D		30-10	≥4	≤30	

PS: Supply customized particle size distribution powder.

Coating Deposited and Properties



Cross-section metallograph of WC-17Ni coatings

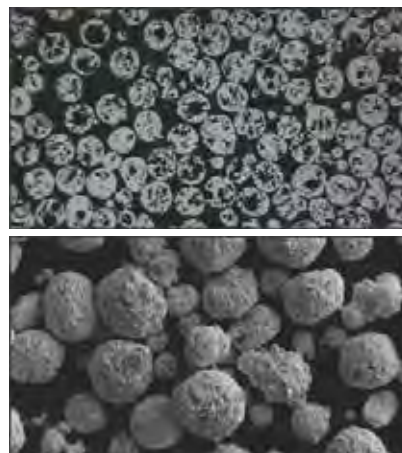
Recommended Spray Parameters(HVOF)	
Material	WC-17Ni
Manufacturing	Agglomerated and sintered
Size fraction(μm)	45~15
Spray Gun	JP5000
Nozzle(inch)	4
Kerosene(L/h)	23
Oxygen(L/min)	900
Carrier gas Ar(L/min)	8.5
Powder feed rate(g/min)	80~100
Spraying distance(mm)	340~380

Coatings Properties	
Hardness (HV _{0.05})	950~1200
Bonding strength (MPa)	>70 MPa
Deposition efficiency (%)	40~50 %
Porosity (%)	<1 %

WC-15NiCr THERMAL SPRAY POWDER

Description

- ⊙ Agglomerated and sintered spherical or nearly spherical gray/dark powders with nice flowability ;
- ⊙ Max.operating temperature 500°C;
- ⊙ Density coatings with high hardness, high abrasion, erosion /corrosion wear resistance ;
- ⊙ NiCr has higher corrosion resistance than Co, CoCr, excellent corrosion resistance in sea water(saline water);
- ⊙ Used in oil field equipment, ball valve (oxidizing environment), hydraulic rod of gate, petrochemical industry, offshore equipment and parts, etc.



Typical cross-section and surface morphology of WC-15NiCr thermal spray powder

Grade & Chemical Composition

Grade	T.C (%)	Cr (%)	Ni (%)	Fe (%)	O (%)
ZTC93D	5.0-5.4	2.5-3.5	11.5-12.5	≤0.5	≤0.5

PS: "D" is spherical or nearly spherical thermal spray powder.

Specification & Physical Properties

Spec.	Type	Size Fraction (μm)	Apparent Density (g/cm ³)	Flow Rate (s/50g)	Application
ZTC9351D	WC-Ni-Cr 85/12/3 Agglomerated and sintered	53-20	≥4	≤18	<ul style="list-style-type: none"> ⊙ HVOF (JP5000、JP8000/DJ2600、DJ2700/Jet Kote / Woka Jet/K2) ⊙ HVAF ⊙ APS
ZTC9353D		45-20	≥4	≤18	
ZTC9352D		45-15	≥4	≤18	
ZTC9381D		45-11	≥4	≤18	
ZTC9354D		38-10	≥4	≤18	
ZTC9382D		30-10	≥4	≤18	

PS: Supply customized particle size distribution powder.

Coating Deposited and Properties



Cross-section metallograph of WC-15NiCr coatings

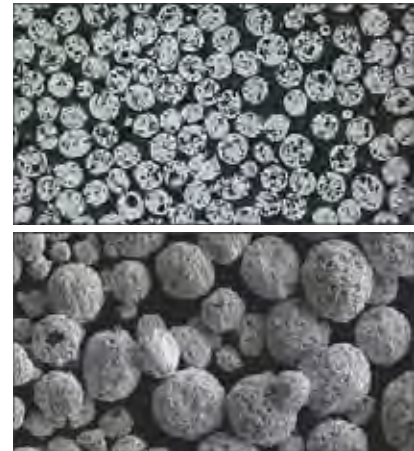
Recommended Spray Parameters(HVOF)	
Material	WC-15NiCr
Manufacturing	Agglomerated and sintered
Size fraction (μm)	45~15
Spray Gun	JP5000
Nozzle (inch)	6
Kerosene (L/h)	23
Oxygen (L/min)	900
Carrier gas Ar (L/min)	8.5
Powder feed rate (g/min)	70~80
Spraying distance (mm)	340~380

Coatings Properties	
Hardness (HV _{0.3})	1000~1350
Bonding strength (MPa)	>70 MPa
Deposition efficiency (%)	35~50 %
Porosity (%)	<1 %

WC-20Cr₃C₂-7Ni THERMAL SPRAY POWDER

Description

- ⊙ Agglomeration and sintered spherical or nearly spherical gray/dark powders with good flowability;
- ⊙ Max.operating temperature 750℃;
- ⊙ Be suitable for wetting environment;
- ⊙ Density coatings with excellent oxidation resistance , good erosion , abrasion wear resistance;
- ⊙ Higher oxidation, corrosion resistance than WC-based coatings;
- ⊙ Mainly used in iron&steel industry, paper making,pump and valve.



Typical cross-section and surface morphology of WC-20Cr₃C₂-7Ni thermal spray powder

Grade & Chemical Composition

Grade	T.C (%)	Ni (%)	Cr (%)	Fe (%)	O (%)
ZTC48D	5.8-6.4	6-8	20-23	≤0.5	≤0.5

PS: “D” is spherical or nearly spherical thermal spray powder.

Specification & Physical Properties

Spec.	Type	Size Fraction (μm)	Apparent Density (g/cm ³)	Flow Rate (s/50g)	Application
ZTC4851D	WC-Cr ₃ C ₂ -Ni 73/20/7 Agglomerated and sintered	53-20	≥4	≤18	<ul style="list-style-type: none"> ⊙ HVOF (JP5000、JP8000/DJ2600、DJ2700/Jet Kote / Woka Jet/K2) ⊙ HVOF ⊙ APS
ZTC4853D		45-20	≥4	≤18	
ZTC4852D		45-15	≥4	≤18	
ZTC4881D		45-11	≥4	≤18	
ZTC4854D		38-10	≥4	≤18	
ZTC4882D		30-10	≥4	≤30	

PS: Supply customized particle size distribution powder.

Coating Deposited and Properties



Cross-section metallograph WC-20Cr₃C₂-7Ni coatings

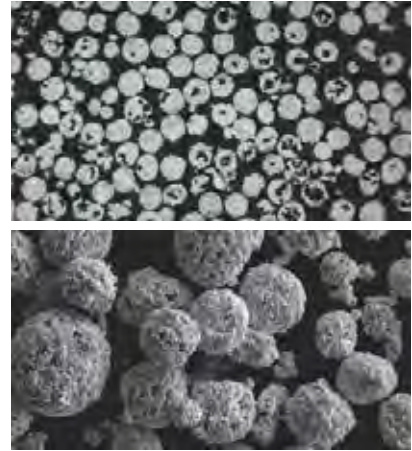
Recommended Spray Parameters(HVOF)	
Material	WC-20Cr ₃ C ₂ -7Ni
Manufacturing	Agglomerated and sintered
Size fraction(μ m)	45~15
Spray Gun	JP5000
Nozzle(inch)	6
Kerosene(L/h)	23
Oxygen(L/min)	900
Carrier gas Ar(L/min)	8.0
Powder feed rate(g/min)	70~80
Spraying distance(mm)	340~360

Coatings Properties	
Hardness (HV _{0.05})	950~1200
Bonding strength (MPa)	>70 MPa
Deposition efficiency (%)	35~45 %
Porosity (%)	<1 %

Cr₃C₂-37WC-18NiCoCr THERMAL SPRAY POWDER

Description

- ⊙ Agglomerated and sintered spherical or nearly spherical gray/dark powders ;
- ⊙ Max.operating temperature 700℃;
- ⊙ Excellent sliding, abrasion, erosion /corrosion wear resistance, good cavitation resistance and corrosion resistance;
- ⊙ High temperatrue solid/liquid/gas corrosion resistance;
- ⊙ Excellent corrosion resistance for high temperature complex corrosion .
- ⊙ Mainly used in valve parts, power generation boiler, biomass burning boiler and chemical industry.



Typical cross-section and surface morphology of Cr₃C₂-37WC-18NiCoCr thermal spray powder

Grade & Chemical Composition

Grade	T.C(%)	Co(%)	Ni(%)	Cr(%)	O(%)	Fe(%)
ZTC49D	7.8-8.4	3-4	10.5-12.5	39.5-42.5	≤0.5	<0.5

PS: "D" is spherical or nearly spherical thermal spray powder.

Specification & Physical Properties

Spec.	Type	Size Fraction (μm)	Apparent Density (g/cm ³)	Flow Rate (s/50g)	Application
ZTC4951D	Cr ₃ C ₂ -WC-NiCoCr 45/37/18 Agglomerated and Sintered	53-20	≥2.5	—	⊙ HVOF (JP5000、 JP8000/DJ2600、 DJ2700/Jet Kote / Woka Jet/K2)
ZTC4953D		45-20	≥2.5	—	
ZTC4952D		45-15	≥2.5	—	
ZTC4981D		45-11	≥2.5	—	⊙ HVOF ⊙ APS
ZTC4954D		38-10	≥2.5	—	
ZTC4982D		30-10	≥2.5	—	

PS: Supply customized particle size distribution powder.

Coating Deposited and Properties



Cross-section metallograph of Cr₃C₂-37WC-18NiCoCr coatings

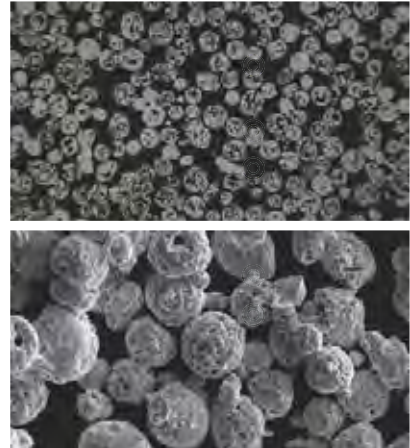
Recommanded Spray Parameters(HVOF)	
Material	Cr ₃ C ₂ -37WC-18NiCoCr
Manufacturing	Agglomerated & Sintered
Size fraction(μm)	45~15
Spray Gun	JP5000
Nozzle(inch)	6
Kerosene(L/h)	25
Oxygen(L/min)	900
Carrier gas Ar(L/min)	7.5
Powder feed rate(g/min)	70~80
Spraying distance(mm)	320~380

Coatings Properties	
Hardness (HV _{0.3})	1050~1250
Bonding strength (MPa)	>60 MPa
Deposition efficiency (%)	40~48 %
Porosity (%)	<3 %

Cr₃C₂-20NiCr THERMAL SPRAY POWDER

Description

- ⊙ Agglomerated and sintered spherical or nearly spherical gray/dark powders ;
- ⊙ Max.operating temperature 870℃;
- ⊙ Excellent sliding, abrasion, erosion /corrosion wear resistance, good cavitation resistance and corrosion resistance;
- ⊙ High temperatrue solid/liquid/gas corrosion resistance;
- ⊙ Used in gas turbine, aircraft engine, valve rod, power generation boiler, metallurgical furnace roller and hydraulic valve etc.



Typical cross-section and surface morphology of Cr₃C₂-20NiCr thermal spray powder

Grade & Chemical Composition

Grade	T.C(%)	Ni(%)	Cr(%)	O(%)	Fe(%)
ZTC51D	9.7-10.7	15-17	Bal.	≤0.5	<0.15

PS: "D" is spherical or nearly spherical thermal spray powder.

Specification & Physical Properties

Spec.	Type	Size Fraction (μm)	Apparent Density (g/cm ³)	Flow Rate (s/50g)	Application
ZTC5151D	Cr ₃ C ₂ -NiCr 80/20 Agglomerated and sintered	53-20	≥2.0	-	⊙ HVOF (JP5000、 JP8000/DJ2600、 DJ2700/Jet Kote / Woka Jet/K2)
ZTC5153D		45-20	≥2.0	-	
ZTC5152D		45-15	≥2.0	-	
ZTC5181D		45-11	≥2.0	-	⊙ HVOF ⊙ APS
ZTC5154D		38-10	≥2.0	-	
ZTC5182D		30-10	≥2.0	-	

PS: Supply customized particle size distribution powder.

Coating Deposited and Properties



Cross-section metallograph of Cr₃C₂-20NiCr coatings

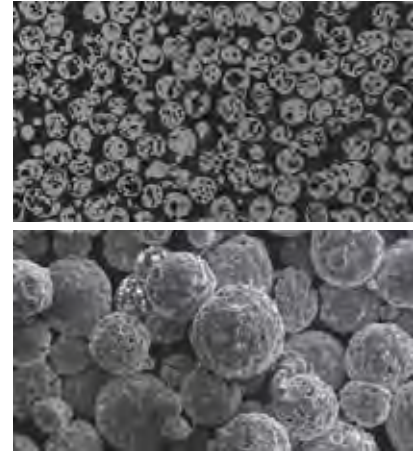
Recommended Spray Parameters(HVOF)	
Material	Cr ₃ C ₂ -20NiCr
Manufacturing	Agglomerated and sintered
Size fraction(μm)	45~15
Spray Gun	JP5000
Nozzle(inch)	8
Kerosene(L/h)	25
Oxygen(L/min)	920
Carrier gas Ar(L/min)	8.0
Powder feed rate(g/min)	50~60
Spraying distance(mm)	320~360

Coatings Properties	
Hardness (HV _{0.05})	1100~1250
Bonding strength (MPa)	>50 MPa
Deposition efficiency (%)	30~45 %
Porosity (%)	<3 %

Cr₃C₂-25NiCr THERMAL SPRAY POWDER

Description

Agglomerated and sintered spherical or nearly spherical gray/dark powders ;
 Max.operating temperature 870℃;
 Excellent sliding, abrasion, erosion /corrosion wear resistance, good cavitation resistance and corrosion resistance;
 High temperatrue solid/liquid/gas corrosion resistance;
 Used in gas turbine, aircraft engine, valve rod, power generation boiler, metallurgical furnace roller and hydraulic valve etc.



Typical cross-section and surface morphology of Cr₃C₂-20NiCr thermal spray powder

Grade & Chemical Composition

Grade	T.C(%)	Ni(%)	Cr(%)	O(%)	Fe(%)
ZTC52D	9.1-10.1	19-21	Bal.	≤0.5	< 0.15

PS: "D" is spherical or nearly spherical thermal spray powder.

Specification & Physical Properties

Spec.	Type	Size Fraction (μm)	Apparent Density (g/cm ³)	Flow Rate (s/50g)	Application
ZTC5251D	Cr ₃ C ₂ -NiCr 75/25 Agglomerated and sintered	53-20	≥2.0	-	◎ HVOF (JP5000、JP8000/DJ2600、DJ2700/Jet Kote / Woka Jet/K2)
ZTC5253D		45-20	≥2.0	-	
ZTC5252D		45-15	≥2.0	-	
ZTC5281D		45-11	≥2.0	-	◎ HVOF ◎ APS
ZTC5254D		38-10	≥2.0	-	
ZTC5282D		30-10	≥2.0	-	

PS: Supply customized particle size distribution powder.

Coating Deposited and Properties



Cross-section metallograph of Cr₃C₂-25NiCr coatings

Recommneded Spray Parameters(HVOF)	
Material	Cr ₃ C ₂ -25NiCr
Manufacturing	Agglomerated & Sintered
Size fraction(μm)	45~15
Spray Gun	JP5000
Nozzle(inch)	8
Kerosene(L/h)	25
Oxygen(L/min)	900
Carrier gas Ar(L/min)	7.5
Powder feed rate(g/min)	50~60
Spraying distance(mm)	320~360

Coatings Properties	
Hardness (HV _{0.3})	900~1200
Bonding strength (MPa)	>50 MPa
Deposition efficiency (%)	30~45 %
Porosity (%)	<3%