

MICRO METAL POWDERS

1. TiN Powder (FTi)

Product : TiN Powder(FTiN)

Use : Widely used in hard alloys, diamond tools and cermet cutters.

Property : Grey powder

Particle Size : $\leq 5\mu\text{m}$

Chemical Composition (wt. %)			
Ti	Balance	N	≥ 21
Fe	< 0.10	O	< 0.10

2. Aluminium Powder

Product : Aluminium Powder

Use : Used in diamond tools, paints and chemical reagents.

Property : Silvery powder

Particle Size : -200mesh -300mesh -400mesh

Chemical Composition (wt. %)			
Al	≥ 99.0	Si	≤ 0.5
Cu	≤ 0.1	H₂O	≤ 0.5
Fe	≤ 0.5	Active aluminum	≤ 95.0

3. Tin Powder

Product : Tin Powder

Use : Widely used in manufacturing porous bronze bearings self-lubricated, structural parts of powder metallurgy, friction discs, sheathing boards of brakes, clutches, metal-graphite electric brushes, diamond grinding wheels, bronze filters, and also used as the additives of rubbers and plastics, and in the production of chemicals.

Property : Grey silvery powder with spherical form or drop form.

Particle Size : -200mesh -300mesh

Bulk Density : 1.8 ~ 2.0 g/cc

Chemical Composition (wt. %)			
Sn	≥ 99.5	S	< 0.02
Fe	< 0.08	Bi	< 0.005
Pb	< 0.02	As	< 0.002
Cu	< 0.02	Sb	< 0.005
Content of total impurities	< 0.10	Burned residue dealt with hydrochloric acid	< 0.025

4. Brass Powder (FCuZn)

Product : Brass Powder (FCuZn)

Use : Widely used in powder metallurgy products, diamond products and the materials of axle bush.

Property : Golden yellow powder with irregular form.

Particle Size : -200mesh -300mesh

Bulk Density : 2.7 ~ 3.6 g/cc

Mobility : ≥ 35 s/50g

Compressing : 7.6 g/cc

Chemical Composition (wt. %)			
Cu	Balance	Pb	0-2.5
Zn	9-41	Hydrogen Loss	≤ 0.3

5. Copper Powder (FCu)

Product : Copper Powder (FCu)

Use : Widely used in the metallurgical products of hard alloys, diamond tools, welding electrodes and gritting materials, chemical catalysts and conductive printing ink.

Property : Rosy light red powder with the form of branches or slices. Its anti-oxidant is good after special treatment, and it can be dissolved in hot sulphuric acid or nitric acid.

Particle Size : -200mesh -300mesh -400mesh(Copper Powder) $\leq 9\mu\text{m}$ (Super fine Cu powder)

Bulk Density : 1.3 ~ 2.3 g/cc (Copper Powder) 0.4 ~ 0.8 g/cc (Super fine Cu powder)

Chemical Composition (wt. %)			
Cu	≥ 99.6	O	≤ 0.15
Fe	≤ 0.02	S	≤ 0.004
Pb	≤ 0.05	Cl	≤ 0.004
As	≤ 0.005	H₂O	≤ 0.05
Sb	≤ 0.01	Sn	≤ 0.004
Bi	≤ 0.002	Ni	≤ 0.003
AIC	≤ 0.05	Zn	≤ 0.004

6. Bronze Powder (FCu 663)

Product : Bronze Powder (FCu 663)

Use : Widely used in powder metallurgy, oil-contained bearings and diamond tools.

Property : Blue and green powder with spherical form.

Particle Size : -200mesh -300mesh

Bulk Density : 2.9 ~ 3.5g/cc

Mobility : >=35 s/50g

Compressing : 7.4 g/cc

Chemical Composition (wt. %)			
Cu	Balance	Pb	2-4
Zn	5-7	Sn	5-7
Fe	< 0.4	O	< 0.4
Impurities	< 0.8		

7. Silver Powder

Product : Silver Powder

Use : Mainly used in the contact materials of electrotechnics instruments and precision alloys.

Property : Silvery grey powder with the form of spheres, Easy to be dissolved in nitric acid

Particle Size : -200mesh(Ag powder) <=0.5um (Super fine Ag powder)

Bulk Density : 1.0 ~ 1.4 g/cc (Ag powder) 0.7 ~ 1.1g/ cc (Super fine Ag powder)

Chemical Composition (wt. %)			
Ag	>=99.95	Pb	< 0.001
Au	< 0.003	Ni	< 0.0086
Fe	< 0.003	Cu	< 0.02
Mn	< 0.001	Sn	< 0.0005
Sb	< 0.001	Ir	< 0.001
Bi	< 0.001	Pt	< 0.001
Rh	< 0.001	Al	< 0.001
Pd	< 0.001		

8. Nickel Powder

Product : Nickel Powder

Use : Widely used in electrode materials, catalysts of chemical industry, magnetic materials, contact materials and powder metallurgy of diamond tools, hard alloys and high temperature alloys.

Property : Grey powder with irregular form

Particle Size : -200mesh/-300mesh 1~2um

Bulk Density : 1.0 ~ 1.7 g/cc 0.6 ~ 0.8 g/cc

Chemical Composition (wt. %)			
Ni	>= 99.6	Pb	< 0.002
Co	< 0.10	Si	< 0.01
Fe	< 0.03	Cu	< 0.03
Mn	< 0.0015	Zn	< 0.001
Mg	< 0.01	Ca	< 0.03
S	< 0.002	C	< 0.03
O	< 0.20	Na	< 0.01

9. Cobalt Powder

Product : Cobalt Powder

Use : Widely used in the metallurgical products of hard alloys, diamond tools, high temperature alloys and magnetic materials, and in the chemicals of rechargeable batteries, blasting pharmaceuticals, rocket fuel and medicine.

Property : Grey powder with irregular form and magnetism. Dissolved in acid, and easy to be oxidized in the moist air.

Particle Size : -200mesh/-300mesh 1~2um

Bulk Density : <=0.72 g/cc 0.5 ~ 0.7 g/cc

Chemical Composition (wt. %)			
Co	>=99.5	O	< 0.40
Ni	< 0.10	Cd	< 0.01
Pb	< 0.005	Cu	< 0.01
Al	< 0.002	Mn	< 0.01
Si	< 0.01	Sn	< 0.001
Bi	< 0.0005	Mg	< 0.01
Fe	< 0.02	Ca	< 0.01
S	< 0.005	C	< 0.02
Zn	< 0.005	As	< 0.005
Na	< 0.01		

10. WC Powder

Product : WC Powder

Use : Used in hard alloys, diamond tools, all kinds of bits and cutting tools.

Property : Dark grey powder

Particle Size : -200mesh,-300mesh

Bulk Density : 3.2 ~ 4.0 g/cc

Chemical Composition (wt. %)			
WC	>= 99.7	Ct	6.15
Cf	< 0.001	Mo	< 0.01
Fe	< 0.02	Na	< 0.0015
Ca	< 0.002	K	< 0.0015
Al	< 0.002	Na	< 0.002
Mg	< 0.001	S	< 0.001
Si	< 0.004		

11. Tungsten Powder

Product : Tungsten Powder

Use : Used in hard alloys, diamond tools, high density alloys, raw materials of W-Re electric thermocouples, alloys of contact headers.

Property : Deep or bright grey powder.

Particle Size : 2~5um 4~6um

Bulk Density : 2.5 ~ 3.0 g/cc

Chemical Composition (wt. %)			
W	>=99.9	Pb	< 0.001
Mo	< 0.008	Si	< 0.003
Fe	< 0.005	Cu	< 0.001
Al	< 0.001	Na	< 0.002
Mg	< 0.002	Ca	< 0.002
Sn	< 0.0001	Ni	< 0.003
C	< 0.005	Sb	< 0.001
K	< 0.002	P	< 0.001
Bi	< 0.0001	As	< 0.002

12. ZrH₂ Powder

Product : ZrH₂ Powder

Use : Used as the additives of alloys and in the powder metallurgy.

Property : Grey powder

Particle Size : -200mesh -300mesh -400mesh

Chemical Composition (wt. %)			
ZrH₂	>= 96.0	Fe	<= 0.20
Cl	<= 0.005	Ca	<= 0.02
Mg	<= 0.10	F	<= 0.005

13. Zirconium Powder

Product : Zirconium Powder for Powder Metallurgy

Use : Used as the additives of alloys and in the powder metallurgy.

Property : Grey powder

Particle Size : -200mesh -300mesh -400mesh

Chemical Composition (wt. %)			
Zr overall	>=98.0	Fe	<=0.20
Cl	<= 0.008	Si	<= 0.10
Mg	<=0.05	Al	<= 0.05
Ca	<= 0.30	S	<=0.05
P	<=0.005	H	<= 0.10

Product : Zirconium Powder for Electric vacuum

Use : Used as the coating materials or gas absorbents in electric vacuum devices.

Property : Grey powder

Particle Size : -200mesh -300mesh -400mesh

Chemical Composition (wt. %)			
Zr overall	>= 97.0	Zr Activity	>=94.0
H	<= 1.0	Fe	<= 0.10
Cl	<=0.008	Si	<=0.10
Mg	<= 0.05	Al	<= 0.05
Ca	<=0.30	S	<=0.05
P	<=0.005		

Product : Zirconium Powder for Ignition

Use : Used in the firework industry and munitions industry.

Property : Grey powder

Chemical Composition (wt.%)								
Specification		FZrY-1	FZrY-2	FZrY-3	FZrY-4	FZrY-5	FZrY-6	FZrY-7
Zr Activity (wt.%)		69-81			>= 90			>= 90
Impurities wt.%	Fe	0.30			0.30			0.30
	Ca	0.10			0.10			0.10
	Mg	0.05			0.05			0.05
	S	0.15			0.15			0.15
	Cl	0.003			0.003			0.003
	F	0.008			0.008			0.008
Particle Size Distribution	<= 10 u m	17-27	35-45	50-70	17-27	35-45	50-70	>= 80
	10-20 u m	28-43	25-40	28-43	28-43	25-40	28-43	-
	>= 20 u m	35-50	15-30	10	35-50	15-30	10	-
The Ignition Point (C)		280-370	270-350	260-330	270-340	250-330	220-320	200-280

14. Magnesium Powder

Product : Magnesium Powder

Use : Used in the manufacturing of reducing agents, flashing powders, lead alloys, desulphurizing pharmaceuticals and lighting pharmaceuticals.

Property : Powder with silvery metallic luster.

Particle Size : -80mesh -100mesh -200mesh

Bulk Density : 0.4 ~ 0.6 g/cc

Chemical Composition (wt. %)			
Mg	>=99.0	Cl	< 0.005
Fe	< 0.05	H₂O	< 0.05
Insoluble matter of hydrochloric acid	< 0.20		

15. TiH Powder

Product : TiH Powder

Use : Widely used in hard alloys, diamond tools and high-temperature alloys.

Property : Grey powder with irregular form.

Particle Size : -200mesh -300mesh.

Chemical Composition (wt. %)			
TiH	>= 99.0	Si	< 0.02
Fe	< 0.06	Cl	< 0.06
C	< 0.02	N	< 0.03
O	< 0.08	H	< 3.70

16. Titanium Powder

Product : Titanium Powder

Use : Widely used in the aeronautic industry, corrosion resisting materials of chemical industry, electric vacuum materials and additives of alloys.

Property : Grey powder with irregular form.

Particle Size : -200mesh -300mesh -400mesh

Bulk Density : 1.2 ~ 1.6 g/cc

Chemical Composition (wt. %)			
Ti	>=97.0	Si	< 0.04
Fe	< 0.12	Cl	< 0.08
C	< 0.05	N	< 0.065
O	< 1.0	H	< 0.03

17. Electrolytic Fe Powder

Product : Electrolytic Fe Powder

Use : Widely used in hard alloys, super hard materials and tool profession.

Property : Grey powder with irregular form

Particle Size : -200mesh -300mesh

Chemical Composition (wt. %)			
Fe	>=99.0	Si	< 0.10
Mn	< 0.35	C	< 0.08
S	< 0.06	P	< 0.02
Insoluble matter of hydrochloric acid	< 0.20		

18. Reduced Fe Powder

Product : Reduced Fe Powder

Use : Used in the powder metallurgy of oil-contained bearings and mechanical structure parts.

Property : Grey powder with irregular form.

Particle
Size : -200mesh -300mesh

Chemical Composition (wt. %)			
Fe	>= 98.0	Si	< 0.10
Mn	< 0.35	C	< 0.04
O	< 0.35	P	< 0.03
S	< 0.03	Insoluble matter of hydrochloric acid	< 0.20

19. Silicon Powder

Product : Silicon Powder

Use : Widely used in the field of electronics and diamond tools.

Particle Size : -200mesh -300mesh

Property : Grey powder

Chemical Composition (wt. %)			
Si	>= 99.9	Fe	<=0.25
Cr	<= 0.0025	Ni	<= 0.009
Mg	<= 0.0015	Ca	<= 0.01
Ti	<= 0.0012	Zn	<= 0.001
V	<= 0.0065	Co	<= 0.0012
Mn	<= 0.0035	Cu	<= 0.014
Mo	<= 0.00075	Al	<= 0.002
Sn	<= 0.005		

Chemical Composition (wt. %)			
Si	>= 99.90	Fe	<=0.0025
Al	<=0.002	Ca	<=0.01
Mg	<= 0.0015	Sn	<= 0.005
Ti	<= 0.0012	Zn	<= 0.001
V	<= 0.0065	Co	<=0.0012
Mn	<= 0.0035	Cu	<= 0.014
Mo	<=0.00075		

20. Molybdenum Powder

Product : Molybdenum Powder

Use : Used in the products of molybdenum and molybdenum alloys, electric heat components, molybdenum headers and powder metallurgy.

Property : Grey powder.

Particle Size : 2 ~ 5um 4 ~ 6um

Bulk Density : 1.0 ~1.2 g/cc

Chemical Composition (wt. %)			
Mo	>=99.9	Pb	< 0.0001
Cu	< 0.001	Ni	< 0.003
Fe	< 0.006	Cd	< 0.0001
Mg	< 0.002	Sn	< 0.0001
Sb	< 0.001	Si	< 0.002
Bi	< 0.0001	P	< 0.001
W	< 0.001	Al	< 0.002
O	< 0.02	C	< 0.007
Ca	< 0.002		

21. Niobium Powder

Product : Niobium Powder

Use : Used in powder metallurgy.

Property : Dark grey powder

Particle Size : -150mesh -200mesh -300mesh

Chemical Composition (wt. %)			
Nb	>= 99.0	Ta	< 0.20
Cr	< 0.005	Ni	< 0.005
Fe	< 0.01	Cu	< 0.003
Mn	< 0.003	Si	< 0.005
Mo	< 0.003	W	< 0.005
Ti	< 0.003	O	< 0.20
N	< 0.04	C	< 0.05
H	< 0.005		

22. Zinc Powder

Product : Zinc Powder

Use : Used for manufacturing such products as diamond tools, paints and chemical reagents.

Property : Grey silvery powder

Particle Size : -200mesh -300mesh

Bulk Density : 2.3 ~ 2.6 g/cc

Chemical Composition (wt. %)			
Zn overall	≥ 99.0	Zn	≥ 95.0
Cd	< 0.1	Fe	< 0.2
Insoluble matter of acid	< 0.2	Pb	< 0.2

23. Manganese Powder

Product : Manganese Powder

Use : Widely used in diamond tools, hard alloys and high temperature alloys.

Property : Grey powder

Particle Size : -100mesh -200mesh -300mesh

Bulk Density : 2.6 ~ 2.9 g/cc

Chemical Composition (wt. %)			
Mn	≥ 99.6	S	≤ 0.009
Se	≤ 0.06	P	≤ 0.0015
Fe	≤ 0.015	O	≤ 0.25
Si	≤ 0.015	C	≤ 0.015

24. Chrome Powder

Product : Chrome Powder

Use : Used in metal ceramics, hard alloys and diamond tools.

Property : White grey powder

Particle Size : -100mesh -200mesh -300mesh

Bulk Density : 2.3 ~ 2.6 g/cc

Chemical Composition (wt. %)			
Cr	≥ 99.3	Si	< 0.12
Fe	< 0.18	Al	< 0.10
Cu	< 0.01	N	< 0.045
O	< 0.20	H	< 0.01
S	< 0.01	P	< 0.01

25. Vanadium Powder

Product : Vanadium Powder

Use : Used in the additives of alloys and powder metallurgy.

Property : Grey powder

Particle Size : -200mesh

Chemical Composition (wt. %)			
V	≥ 98.0	Fe	≤ 0.15
Cr	≤ 0.20	Si	≤ 0.12

26. Lead Powder

Product : Lead Powder

Property : Grey powder with drop form, easy to be oxidized in the moist air.

Particle Size : -200mesh

Chemical Composition (wt. %)			
Pb	≥ 99.9	Fe	≤ 0.005
Cu	≤ 0.01	As	≤ 0.001
Sb	≤ 0.005	Bi	≤ 0.005
Burned residue dealt with nitric acid		≤ 0.025	

27. Bismuth Powder

Product : Bismuth Powder

Use : Used for manufacturing the bismuth products and bismuth alloys.

Property : Light grey powder

Particle Size : -100mesh -200mesh -300mesh

Chemical Composition (wt. %)			
Bi	≥ 99.0	Fe	< 0.15
Si	< 0.03	Al	< 0.02
Mg	< 0.015	Zn	< 0.002
Cu	< 0.02	Ni	< 0.01
Cr	< 0.02	Mn	< 0.01
Pb	< 0.001	Co	< 0.001
O	< 0.60	BiO	< 0.10
BiC	< 0.06		

28. Boron Powder

Product : 3N Boron Powder

Use : Used as the additives of powder metallurgy and surface coating materials such as hot spraying.

Property : Black Powder

Particle Size : -200mesh

Chemical Composition (wt. %)			
B	≥ 99.97	Mg	< 0.00048
Cr	< 0.0024	Ni	< 0.00075
Fe	< 0.0052	Co	< 0.001
Mn	< 0.001	Sn	< 0.001
Ti	< 0.001	Pb	< 0.001
Si	< 0.0013	Al	< 0.0042
Cu	< 0.0001	Ca	< 0.014
V	< 0.001		

Product : 4N Boron Powder

Use : Used in semiconductor industry, the additives of powder metallurgy and surface coating materials such as hot spraying.

Property : Black and purple powder

Particle Size : -200mesh

Chemical Composition (wt. %)			
B	≥ 99.99	Mg	< 0.0001
Cr	< 0.00005	Ni	< 0.0001
Fe	< 0.0001	Co	< 0.0001
Mn	< 0.00005	Ag	< 0.0001
Cd	< 0.0001	Pb	< 0.0001

Product : 5N Boron Powder

Use : Used in semiconductor industry.

Property : Puce Powder

Particle Size : -200mesh

Chemical Composition (wt. %)			
B	≥ 99.999	Mg	< 0.0001
Cr	< 0.00005	Ni	< 0.0001
Fe	< 0.0001	Co	< 0.0001
Mn	< 0.00005	Ag	< 0.0001
Cd	< 0.0001	Pb	< 0.0001

29. ZrC Powder

Product : ZrC Powder

Use : Used in the areas such as hard alloys and powder metallurgy.

Property : Grey powder

Particle Size : -300mesh

Chemical Composition (wt. %)			
ZrC	Balance	Ct	≥ 11.50
C f	≤ 0.50	Mn	≤ 0.01
Mg	≤ 0.01	Fe	≤ 0.10
Sn	≤ 0.02	Ni	≤ 0.02
Al	≤ 0.01	Cu	≤ 0.003
Si	≤ 0.10	O	≤ 0.40

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