

## W 粉

## Tungsten metal powder



粉末分厂能够生产粒度0.2 ~ 60 μm之间的任何一种钨粉，产品具有纯度高、分散性好、质量稳定等优良特性。

外观：钨粉外观呈深灰色或亮灰色，颜色均匀一致。

用途：广泛应用于硬质合金、高比重合金、军工产品、钨制品等多个领域。

Any kinds of the tungsten metal powders with a particle size between 0.2~60μm can be produced. The products have a high purity, good dispersity, and stable quality, etc.

Appearance: Deep grey or light grey, the color is uniform and unanimous.

Usage: The tungsten metal powder can be used widely for manufacturing cemented carbide, high density alloy, war products and the other tungsten products.

### 通用钨粉：

该系列钨粉具有质量稳定、适应性广。

**Common tungsten powders:** The series of tungsten powders has stable quality and wide adaptability.

类别 Classification of the particle size	牌号 Grade	BET ( m <sup>2</sup> /g ) 粒度 ( μm ) Particle size	主要化学组成 (%) Main chemical composition	
			W	O
超细颗粒 Super fine	FW02	BET:>5.0	≥99.9	≤0.60
	FW04	BET:4.0-5.0	≥99.9	≤0.55
	FW06	0.6-0.8	≥99.9	≤0.50
亚细颗粒 Sub-fine	FW08	0.80-1.00	≥99.9	≤0.25
细颗粒 Fine	FW10	1.00-1.50	≥99.9	≤0.20
	FW15	1.50-2.00	≥99.9	≤0.15
	FW20	2.00-2.50	≥99.9	≤0.10
中颗粒 Medium fine	FW25	2.50-3.00	≥99.9	≤0.08
	FW30	3.00-4.00	≥99.9	≤0.08
	FW40	4.00-6.00	≥99.9	≤0.06
	FW60	6.00-8.00	≥99.9	≤0.06
粗颗粒 Coarse	FW80	8.00-10.00	≥99.9	≤0.06
	FW100	10.00-15.00	≥99.9	≤0.05
特粗颗粒 Extra coarse	FW150	15.00-20.00	≥99.9	≤0.05
	FW200	20.00-25.00	≥99.9	≤0.08
超粗颗粒 Super coarse	FW250	25.00-30.00	≥99.9	≤0.10
	FW300	30.00-40.00	≥99.9	≤0.12
	FW400	40.00-60.00	≥99.9	≤0.15

注明：此标准中的粒度为钨粉供应态的粒度。

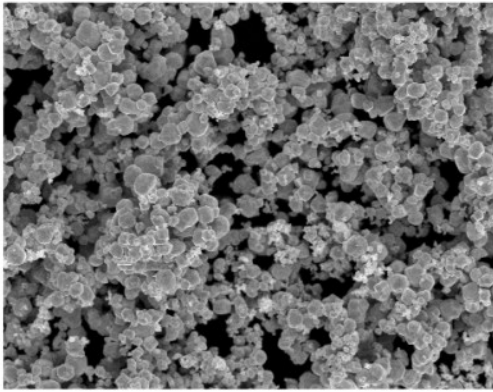
**Note:** The particle size of the tungsten metal powder in the table is as supplied in the standard.



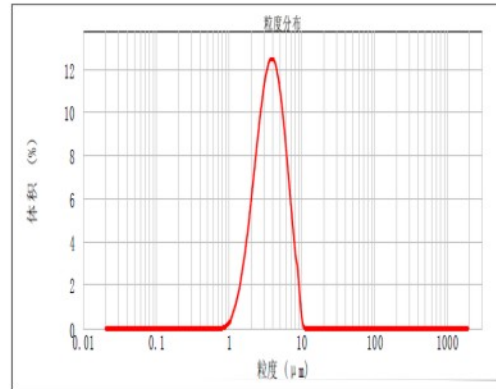
## 高比重合金用钨粉: 该系列钨粉纯度高, 压坯成型性好、晶型晶貌一致性好。

**Tungsten metal powder for high density alloy:** this series of tungsten metal powders has high purity, good forming ability of pressing, and unanimity of the crystal morphology.

类别 classification of the particle size	牌号 Grade	粒度 (μm) Particle size	主要化学组成 (%) Main chemical composition	
			W	O
中颗粒 Medium fine	FWG-1	2.50-3.50	≥99.9	≤0.07
	FWG-2	2.00-4.00	≥99.9	≤0.08
	FWG-3	2.00-4.00	≥99.9	≤0.08
	FWG-4	2.50-3.50	≥99.9	≤0.07



FWG-4电镜 1000×

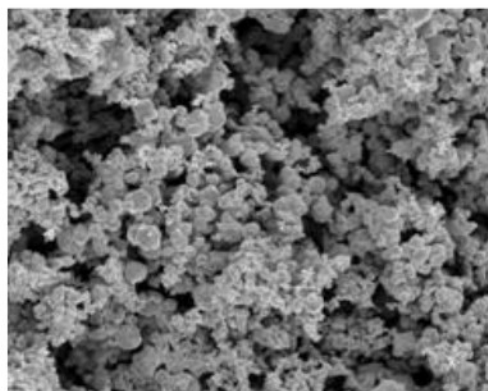


FWG-4激光粒度组成  
FWG-4 particle size determined by laser

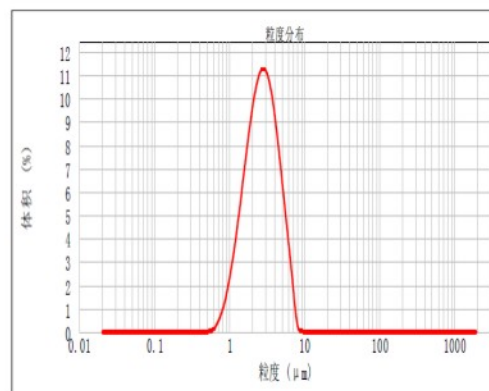
## 钨制品用钨粉: 该系列钨粉纯度高、流动性好、压坯成型性好。

**Tungsten metal powder for tungsten products:** this series of tungsten metal powder has high purity, good flow ability and forming ability of pressing.

类别 Classification of the particle size	牌号 Grade	粒度 (μm) Particle size	主要化学组成 (%) Main chemical composition	
			W	O
中颗粒 Medium fine	FWAF2.0-2.4	2.00-2.40	≥99.9	≤0.10
	FWAF2.5-3.0	2.50-3.00	≥99.9	≤0.08
	FWAF4-6	4.00-6.00	≥99.9	≤0.06
	FWAF6-8	6.00-8.00	≥99.9	≤0.06



FWAF2.5-3.0电镜 1000×



FWAF2.5-3.0激光粒度组成  
FWAF2.5-3.0 particle size determined by laser

## W 粉化学成分

Tungsten metal powder Chemical composition

杂质含量 Content of impurities, (%)	元素 Element	最大值 Max	典型值 Typical value
	Al	0.001	0.0005
	As	0.0015	0.0005
	Bi	0.0003	0.0001
	C	0.005	0.002
	Ca	0.0015	0.0005
	Cd	0.0003	0.0001
	Co	0.001	0.0005
	Cr	0.002 / 0.005*	0.001/0.002*
	Cu	0.0005	0.0001
	Fe	0.005 / 0.015*	0.002/0.003*
	K	0.002	0.0007
	Mg	0.001	0.0005
	Mn	0.001	0.0005
	Mo	0.005	0.001
	Na	0.002 / 0.005*	0.0007/0.003*
	Ni	0.003 / 0.005*	0.001/0.002*
	P	0.001	0.0007
	Pb	0.0003	0.0001
	Sb	0.001	0.0005
Si	0.002	0.0010	
Sn	0.0003	0.0001	
Ti	0.001	0.0005	
V	0.001	0.0005	
S	0.001	0.0005	

注明：1、W含量采用100%-除气体以外的杂质含量。

2、Fe、Ni、Cr有\*号标识的为FW60到FW400的标准；Na有\*号标识的为FW150到FW400的标准。

**Note:** 1、Tungsten content is calculated using 100% minus all impurities contents with exception of gases.

2、Fe, Ni, Cr with mark \* hereof are as a standard for FW60--FW400; Na with mark \* is hereof as a standard for FW150-FW400.