



Вольфрамовые ПОРОШКИ

**Tungsten Metal Powder
Tungsten Carbide Powder**



Professional Manufacturer of Tungsten Powders
Trusted Supplier of Tungsten Materials

ООО “Инструмент поставка”

тел.: 8 /4722/ 407-599

сот.: 8-952-494-7503

309000, г. Белгород, пер. Заводской 5-й,
д. 9.

305000, г. Курск, ул. Литовская, д. 12А,
пом. 3.

E-mail: postavkatools@yandex.ru

Сайт: www.toolprofit.ru

**XIAMEN GOLDEN EGRET SPECIAL
ALLOY CO.,LTD.**

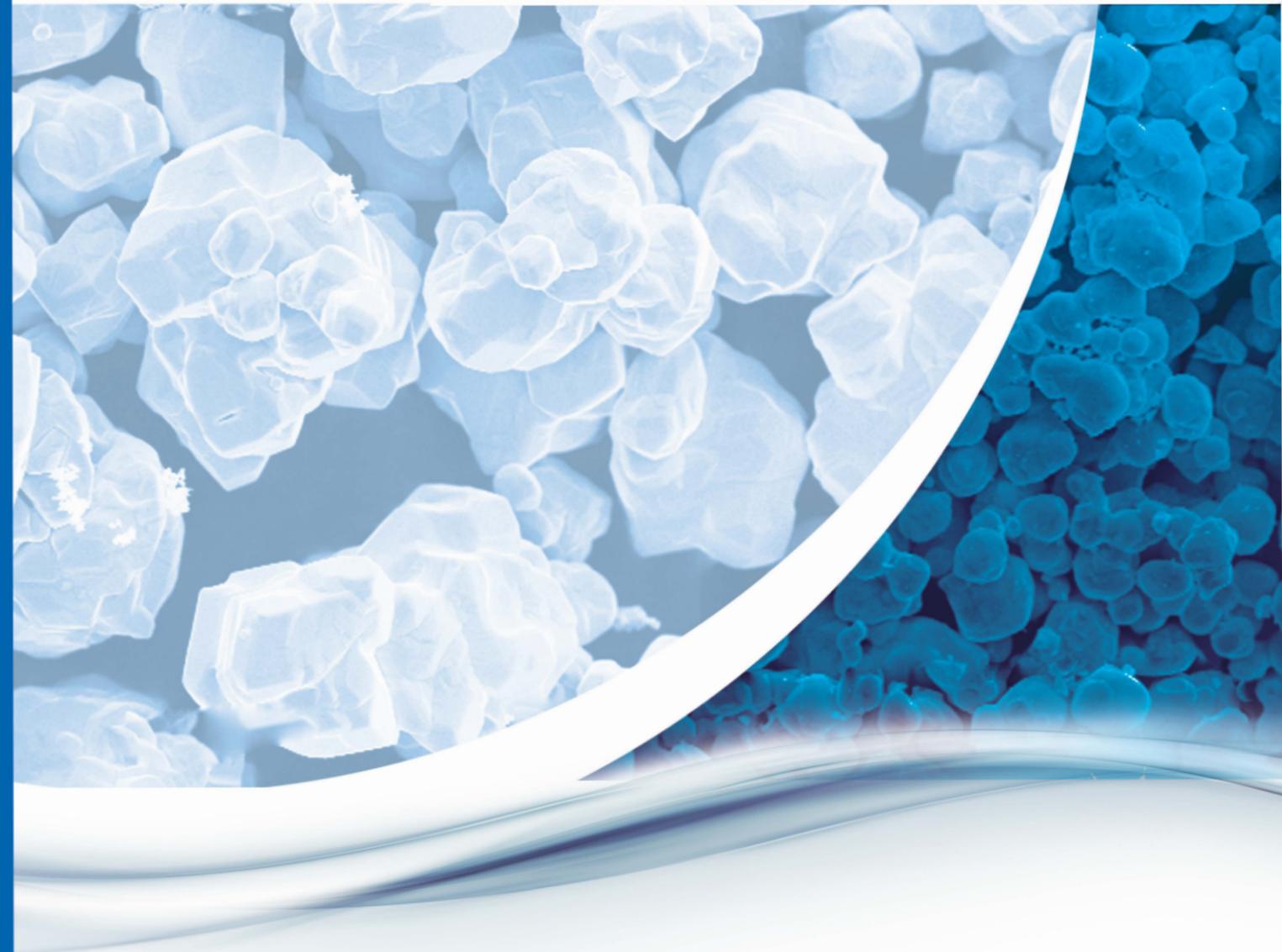
Add: No.69 Xinglong Road Huli Xiamen, Fujian, CHINA
Tel: +86-592-6022393
Fax: +86-592-5623208
[Http://www.gesac.com.cn](http://www.gesac.com.cn)

**JIUJIANG GOLDEN EGRET HARD
MATERIAL CO.,LTD.**

Add:No.18 of ChunJiang Road, City-West Port District,
Economic-Technological Development Area,
JiuJiang City, Jiangxi, CHINA

2014 VERSION

Xiamen Golden Egret Special Alloy Co., Ltd.
Jiujiang Golden Egret Hard Material Co., Ltd.



Company Profile

Xiamen Tungsten Co., Ltd.

Xiamen Tungsten Co., Ltd. (XTC) is a group corporation listed on the Shanghai Stock Exchange and one of the Top 500 listed companies in China. XTC is recognized as a "National Key High-Tech Enterprise," part of the "National Torch Plan Tungsten" material industrial base, and one of the first "Developing Circular Economy Demonstration Enterprises" - recognized by the government in China - validating XTC's commitment to complete resource stewardship; from mining to downstream products and back through to resource reclamation and recycling.

Xiamen Tungsten Co., Ltd. is a leader in the R&D, production and sales of a complete range of tungsten based products; including tungsten concentrate, tungsten molybdenum intermediate products, tungsten powders, tungsten wire, cemented carbide and cutting tools. In addition, XTC is engaged in various rare earth materials / new energy materials such as rare earth oxides, rare earth metals, rare earth luminescent materials, magnetic materials, rare earth hydrogen storage, and lithium battery materials. XTC owns and manages the complete tungsten "industrial chain" - from tungsten molybdenum mines, refining, all aspects of down-stream processing as well as tungsten molybdenum reclamation. XTC also owns and manages this same complete "industrial chain" for rare earths - including rare earth mines and exploration, refining, new material development, research and applications. XTC has also established and operates the China National Tungsten Material Technology R&D Center and New Energy Material R&D Center, in Xiamen, Fujian Province.

XTC adheres to the tenets of "Employees shall achieve self-worth, customers will find complete satisfaction with our service, and shareholders will realize a profit on their investment". The company achieves this through continuous innovation and orientation to high technology processes. XTC strives to make full use of its market leading advantages of; capital, technology, equipment and individual talent, allowing us to be one of the most competitive and first class companies in the world.

Xiamen Golden Egret Special Alloy Co., Ltd.

Xiamen Golden Egret Special Alloy Co., Ltd. (GESAC), established in 1989, is a Sino-Foreign joint-venture and a National level "High-Tech Enterprise". GESAC is engaged in the R&D and production of tungsten metal powder, tungsten carbide powder, cemented carbide, cutting tools and other tungsten related products.

GESAC is one of the world's largest manufacturers of tungsten powder and tungsten carbide powder. It exports high quality powders to more than forty countries worldwide, including major European markets, the United States, and Japan.

GESAC established the China National R&D Center for Tungsten Material Technology, equipped with international first-class technology, production equipment and detection instrumentation. The company is certified in multiple international management standards: ISO9001: 2000, authenticated by China Quality Certification Center and Norway DNV Quality Management System, ISO14001: 2004 Environmental Management System, and OHSAS18001: 2007 Occupation Health Safety Management System. GESAC has been honored as a "National Key High-Tech Enterprise", "Enterprise with Advanced Technology" and Export-Oriented Enterprise".

GESAC adheres to the philosophy of "Integrity-based" business practices. As a high paced evolving modern enterprise, GESAC continues its innovative history and constant leading edge development through focus on "equipment first", "technology first", "management first", "quality first", "service first".

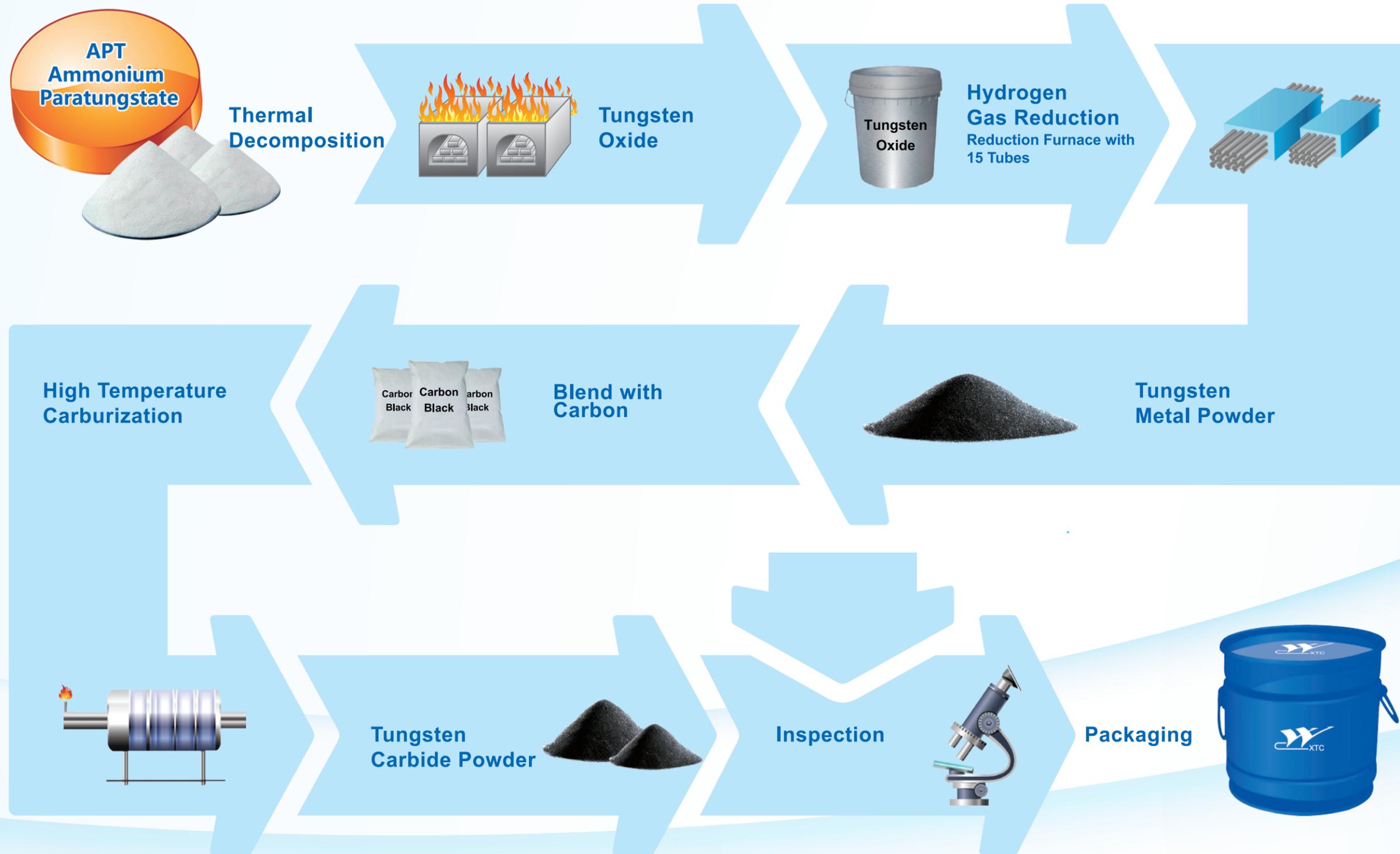
Jiujiang Golden Egret Hard Material Co., Ltd.

Jiujiang Golden Egret Hard Material Co., Ltd. was established by Xiamen Tungsten Co., Ltd. in 2011. It is a comprehensive company engaged in production of tungsten-based powders, wear parts and precision tungsten components.

The company further extends the high technology of the XTC Group in tungsten metal powder, tungsten carbide powder and cemented carbide production. It applies advanced management concepts, uses the most advanced production techniques and inspection equipment, benefits from large scale processing and automatic production lines, and provides only the highest quality products, efficiently, to its customers.



Production Flow Chart of Powder



2014 VERSION Contents

Tungsten Metal Powder

Golden Egret Tungsten Metal Powder is reduced from Tungsten Oxides by Hydrogen, and widely used in various fields such as cemented carbide, heavy alloys, electronic targets, diamond tools, electrical alloys, etc.

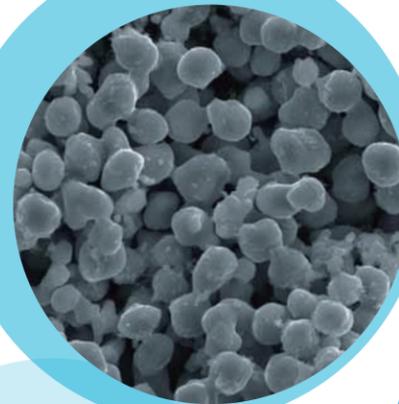
We supply a full range of particle size from 0.1um to 25 μm tungsten metal powder with stable and repeatable quality.

Tungsten Metal Powder

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S Type Universal Application

S type tungsten metal powder with stable quality and low impurities is produced according to GESAC's standard specification.

Main Properties

Grade	F.S.S.S(um)	Main chemical composition(%)		
		W	N.V.R	O
GW008	0.80-0.90	≥99.9	≤0.010	≤0.25
GW010	0.90-1.10	≥99.9	≤0.010	≤0.20
GW015	1.40-1.60	≥99.9	≤0.010	≤0.12
GW020	1.80-2.20	≥99.9	≤0.010	≤0.08
GW025	2.30-2.70	≥99.9	≤0.010	≤0.08
GW030	2.80-3.20	≥99.9	≤0.010	≤0.06
GW035	3.30-3.70	≥99.9	≤0.010	≤0.06
GW040	3.80-4.20	≥99.9	≤0.010	≤0.04
GW045	4.30-4.70	≥99.9	≤0.010	≤0.04
GW050	4.80-5.20	≥99.9	≤0.010	≤0.04
GW055	5.30-5.70	≥99.9	≤0.010	≤0.04
GW060	5.50-6.50	≥99.9	≤0.010	≤0.04
GW090	8.0-10.0	≥99.9	≤0.010	≤0.04
GW100	9.0-11.0	≥99.9	≤0.010	≤0.03
GW150	13.0-17.0	≥99.9	≤0.010	≤0.03
GW200	16.0-24.0	≥99.9	≤0.010	≤0.03

※ Average particle size is F.S.S.S particle (ASTM B330-2005 Standard)
 ※ N.V.R is the residue after chlorinated vapor extraction.
 ※ Tungsten content equals to 100% minus the total impurity element content.

Main Properties

Element	Max	Typical	Element	Max	Typical	Element	Max	Typical
Al	0.0010	0.0005	Cu	0.0003	0.0001	P	0.0010	0.0005
As	0.0010	0.0005	Fe	0.0050	0.0010	Pb	0.0003	0.0001
Bi	0.0003	0.0001	K	0.0015	0.0010	S	0.0010	0.0005
C	0.0030	0.0010	Mg	0.0010	0.0005	Sb	0.0005	0.0003
Ca	0.0015	0.0006	Mn	0.0010	0.0005	Si	0.0015	0.0010
Cd	0.0005	0.0001	Mo	0.0030	0.0016	Sn	0.0003	0.0001
Co	0.0010	0.0005	Na	0.0015	0.0007	Ti	0.0010	0.0005
Cr	0.0020	0.0010	Ni	0.0020	0.0010	V	0.0010	0.0005

G Type Specific Applications in Pure Tungsten Products and Heavy Alloys

G type tungsten metal powder with high purity, good flowability and formability, can be used for manufacturing higher formability pure tungsten products and heavy alloy.

Main Properties

Grade	F.S.S.S(um)	O(%)	N.V.R(%)
GW015G	1.4-1.6	≤0.12	≤0.01
GW025G	2.4-2.6	≤0.08	≤0.01
GW030G	2.8-3.2	≤0.04	≤0.01
GW040G	3.8-4.2	≤0.04	≤0.01
GW050G	4.8-5.2	≤0.04	≤0.01
GW065G	6.3-6.7	≤0.04	≤0.01

T Type Specific Applications in Tungsten Sputter Targets

T type tungsten metal powder with high purity, low oxygen content and good formability can be used for manufacturing tungsten sputter targets with higher purity, higher density, even distribution, lower impurity and oxygen content, and can meet the high quality requirements of sputter coating.

Main Properties

Grade	W(%)	O(%)	
		Max	Typical
GW010T	≥99.99	0.18	0.15
GW025T	≥99.99	0.07	0.07
GW040T	≥99.99	0.04	0.03
GW050T	≥99.99	0.04	0.02
GW120T	≥99.99	0.03	0.01

E Type Specific Applications in Electrical Alloys

E type tungsten metal powder with concentrated particle size, perfect grain, high purity, and good dispersibility can be used for manufacturing Electrical Alloy with higher density and homogenous microstructure.

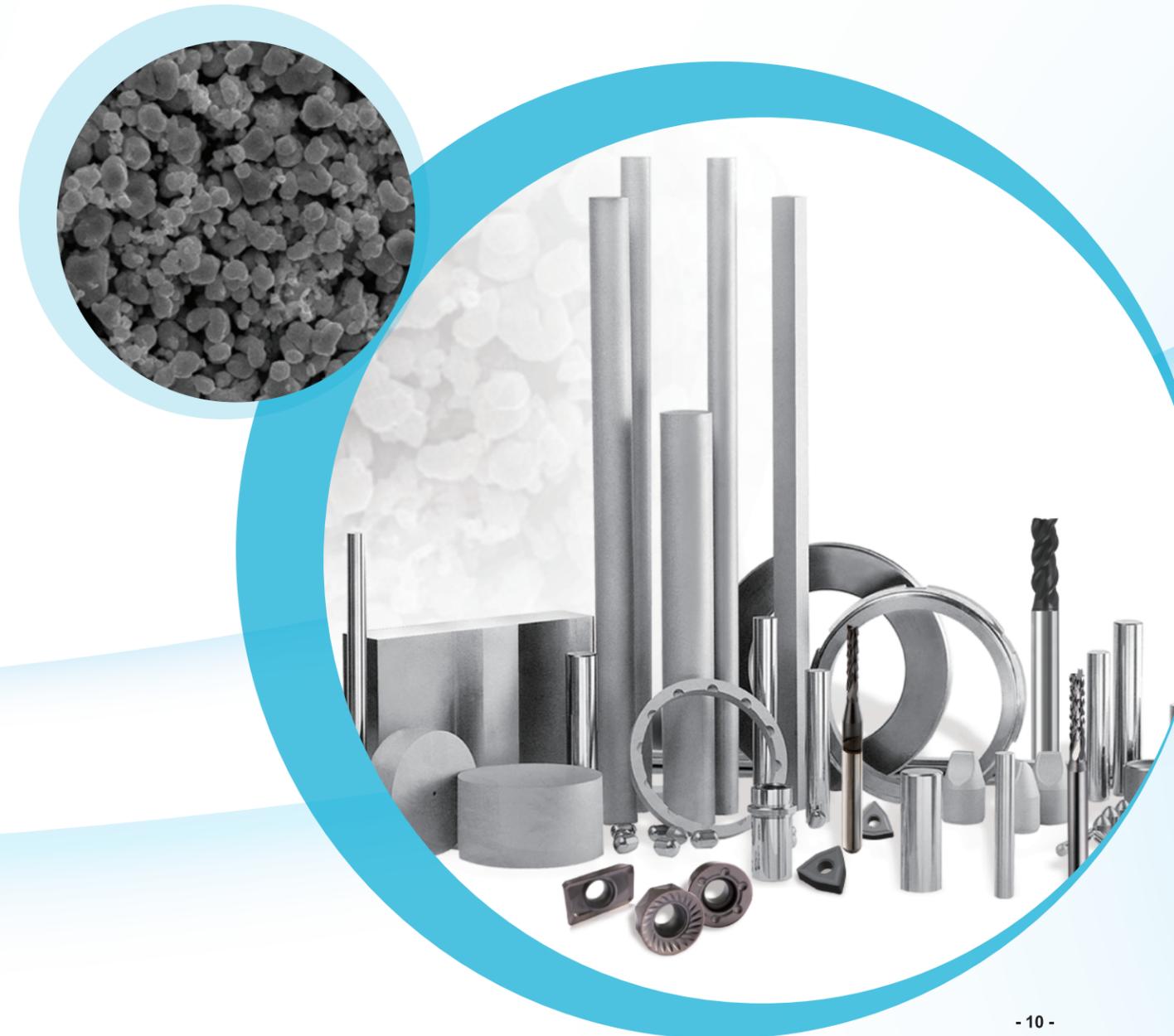
Main Properties

Grade	F.s.s.(um)	N.V.R(%)
GW020E	1.8-2.2	≤0.01
GW025E	2.2-2.8	≤0.01
GW030E	2.8-3.5	≤0.01
GW040E	3.5-4.5	≤0.01
GW050E	4.5-5.5	≤0.01
GW060E	5.5-6.5	≤0.01
GW065E	6.0-7.0	≤0.01

Tungsten Carbide Powder

Tungsten carbide powder is widely used for manufacturing high hardness and high strength industrial tools and wear parts, such as cutting tools, drills, mining buttons, electrical contact etc.

We supply a complete particle size range from 0.1um to 25 μm tungsten carbide powders with high purity, consistent grain with stable, repeatable quality.



S Type Universal Applications

S type tungsten carbide powders can meet general production requirements and it is produced according to GESAC's standard specification.

Main Properties

Grade	F.S.S.S(μm)	O(%)	Ct(%)	Cf(%)
GWC008	0.80-0.90	≤0.15	6.13±0.05	≤0.07
GWC010	0.90-1.10	≤0.15	6.13±0.05	≤0.06
GWC015	1.40-1.60	≤0.10	6.13±0.05	≤0.05
GWC020	1.80-2.20	≤0.07	6.13±0.05	≤0.05
GWC025	2.30-2.70	≤0.07	6.13±0.05	≤0.05
GWC030	2.80-3.20	≤0.07	6.13±0.05	≤0.05
GWC040	3.70-4.30	≤0.05	6.13±0.05	≤0.05
GWC050	4.60-5.40	≤0.05	6.13±0.05	≤0.05
GWC060	5.50-6.50	≤0.04	6.13±0.05	≤0.05
GWC080	7.50-8.50	≤0.03	6.13±0.05	≤0.05
GWC100	9.00-11.0	≤0.03	6.13±0.05	≤0.05
GWC150	13.0-17.0	≤0.03	6.13±0.05	≤0.05
GWC200	16.0-24.0	≤0.03	6.13±0.05	≤0.05

※ Average particle size is F.S.S.S particle(ASTM B330-2005 Standard);
 ※ Ct content can be adjusted according to customer's requirement.

Main Properties

Element	Max	Typical	Element	Max	Typical	Element	Max	Typical
Al	0.0010	0.0005	Fe	0.0150	0.0030	Pb	0.0003	0.0001
As	0.0010	0.0005	K	0.0020	0.0010	S	0.0010	0.0005
Bi	0.0003	0.0001	Mg	0.0010	0.0005	Sb	0.0005	0.0003
Ca	0.0015	0.0006	Mn	0.0010	0.0005	Si	0.0015	0.0010
Cd	0.0005	0.0001	Mo	0.0030	0.0016	Sn	0.0003	0.0001
Co	0.0100	0.0030	Na	0.0020	0.0007	Ti	0.0010	0.0005
Cr	0.0050	0.0020	Ni	0.0050	0.0020	V	0.0010	0.0005
Cu	0.0003	0.0001	P	0.0010	0.0005			

U Type Ultra-fine

U type tungsten carbide powder is mainly used for manufacturing high hardness and strength requirement products, such as PCB tool and precision tool etc.

Ultra-fine tungsten carbide powder with good dispersibility, concentrated particle size distribution, low oxygen content, low sintering temperature sensibility can be used for manufacturing ultra-fine carbide to achieve higher hardness and strength.

Main Properties

Grade	BET(m ² /g)	Ct(%)	Cf(%)	O(%)	Recommend Inhibitor
GWC002U	2.8-3.2	6.20±0.05	≤0.15	≤0.50	VC 0.3% Cr3C2 0.5%
GWC003U	2.4-2.8	6.20±0.05	≤0.13	≤0.35	
GWC004U	2.0-2.4	6.20±0.05	≤0.12	≤0.35	
GWC005U	1.8-2.2	6.20±0.05	≤0.10	≤0.35	

※ Average Particle Size is BET (m²/g) ;
 ※ Ct content, inhibitor type and content can be adjusted according to customer's requirement.

Y Type Sub-micron

Y type tungsten carbide powder with concentrated particle size, good dispersibility and stable quality can be easily suitable for subsequent production process.

Main Properties

Grade	F.S.S.S(μm)	O(%)	Ct(%)	Cf(%)
GWC006C	0.60-0.70	≤0.30	6.13±0.05	≤0.10
GWC007C	0.70-0.80	≤0.25	6.13±0.05	≤0.08
GWC008C	0.80-0.90	≤0.20	6.13±0.05	≤0.07

※Ct content can be adjusted according to customer's requirement.

C Type

Specific Applications in Indexable Inserts

C type tungsten carbide powder with concentrated particle size distribution, good dispersibility and stable shrinkage can be used for manufacturing Indexable Inserts with better wear resistance and tool edge chipping resistance.

Main Properties

Grade	F.S.S.S(μm)	O(%)	Ct(%)	Cf(%)
GWC010C	0.90-1.10	≤0.15	6.13±0.05	≤0.06
GWC015C	1.40-1.60	≤0.10	6.13±0.05	≤0.05
GWC020C	1.80-2.20	≤0.07	6.13±0.05	≤0.05
GWC025C	2.30-2.70	≤0.07	6.13±0.05	≤0.05
GWC030C	2.80-3.20	≤0.07	6.13±0.05	≤0.05

※ Average particle size is F.S.S.S particle(ASTM B330-2005 Standard) ;
 ※ Ct content can be adjusted according to customer's requirement.

H Type

Specific Application in Carbide Anvil

H Type tungsten carbide powder with good dispersibility, concentrated particle size distribution, high purity and stable quality can be used for manufacturing carbide anvils with higher strength, and increased thermal fatigue resistance under high temperature.

Main Properties

Grade	F.S.S.S (μm)	O(%)	Ct(%)	Cf(%)
GWC008H	0.70-0.90	≤0.20	6.13±0.05	≤0.07
GWC013H	1.10-1.50	≤0.15	6.13±0.05	≤0.05
GWC015H	1.30-1.60	≤0.12	6.13±0.05	≤0.05
GWC018H	1.60-1.75	≤0.07	6.13±0.02	≤0.05
GWC020H	1.80-2.20	≤0.07	6.13±0.02	≤0.05

※ Ct content can be adjusted according to customer's requirement.

M Type

Specific Applications in Mining Products

M Type tungsten carbide powder with good dispersibility and perfect grain can be used for manufacturing mining buttons with excellent impact resistance, abrasion resistance and thermal fatigue resistance.

Main Properties

Grade	F.S.S.S(μm)	O(%)	Ct(%)	Cf(%)
GWC020M	1.80-2.20	≤0.07	6.13±0.05	≤0.05
GWC025M	2.30-2.70	≤0.07	6.13±0.05	≤0.05
GWC030M	2.80-3.20	≤0.07	6.13±0.05	≤0.05
GWC035M	3.30-3.70	≤0.05	6.13±0.05	≤0.05
GWC040M	3.70-4.30	≤0.05	6.13±0.05	≤0.05
GWC060M	5.50-6.50	≤0.04	6.13±0.05	≤0.05
GWC080M	7.50-8.50	≤0.03	6.13±0.05	≤0.05
GWC100M	9.00-11.0	≤0.03	6.13±0.05	≤0.05
GWC150M	13.0-17.0	≤0.03	6.13±0.05	≤0.05
GWC200M	16.0-24.0	≤0.03	6.13±0.05	≤0.05

※ Ct content can be adjusted according to customer's requirement.

R Type

Specific Applications in Carbide Roll Rings

R Type tungsten carbide powder with perfect grain can be used for manufacturing carbide roll rings with higher thermal fatigue resistance and better wear resistance under high temperature.

Main Properties

Grade	F.S.S.S(μm)	O(%)	Ct(%)	Cf(%)
GWC030R	2.50-3.50	≤0.07	6.13±0.05	≤0.05
GWC040R	3.50-4.50	≤0.05	6.13±0.05	≤0.05
GWC050R	4.50-5.50	≤0.05	6.13±0.05	≤0.05
GWC080R	7.00-9.00	≤0.03	6.13±0.05	≤0.05
GWC100R	9.00-11.0	≤0.03	6.13±0.05	≤0.05
GWC120R	11.0-13.0	≤0.03	6.13±0.02	≤0.05
GWC150R	11.0-16.0	≤0.03	6.13±0.05	≤0.05
GWC200R	16.0-24.0	≤0.03	6.13±0.02	≤0.05

※ Ct content can be adjusted according to customer's requirement.

