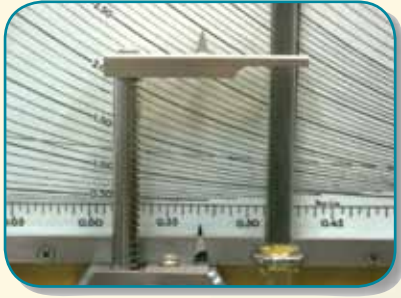


# TUNGSTEN POWDERS



 **TaeguTec**





TaeguTec

## Tungsten Powders

TaeguTec's tungsten powders are produced through fully automated state-of-the-art equipment. TaeguTec is exceeding customer's expectations with its guaranteed computerized quality control system and accumulated knowledge of the complete process, from raw materials through to final product.

TaeguTec provides a "Certificate of Analysis" for the physical properties and chemical compositions of every production batch. To further enhance customer satisfaction, a "Test Report" is available upon customers' request. This report informs the customer of the exacting specifications of the end product.

To meet the customer's demands for the highest quality products that will enhance productivity, TaeguTec will strive to supply consistently high quality tungsten powders through its ISO 9001 quality management system acquired in 1994.

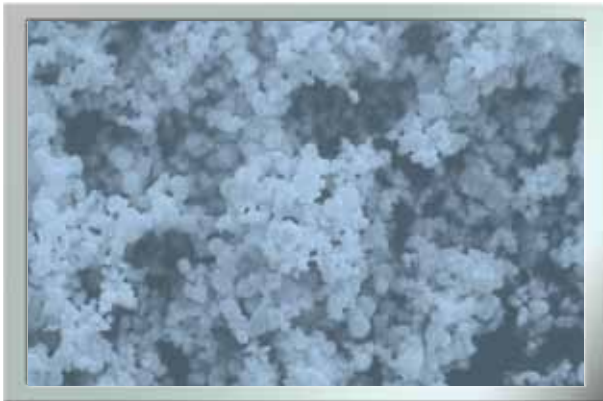


# TUNGSTEN METAL POWDER (W)

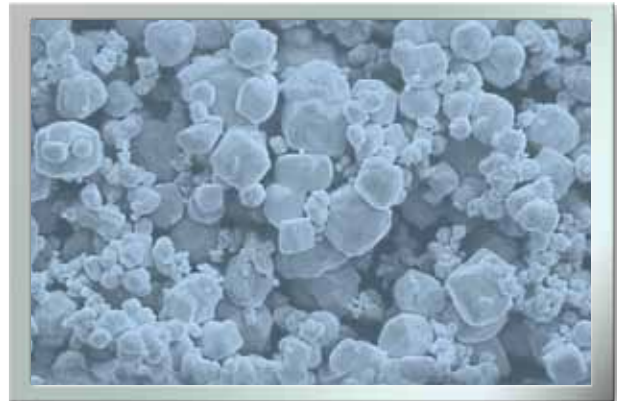
TaeguTec has been producing high quality tungsten metal powder with a variety of particle sizes for over 30 years. As a major manufacturer in the tungsten industry, TaeguTec has the experience and expertise to provide the highest level of service. This level of service is guaranteed worldwide through the company's use of modern equipment and its metallurgical history.



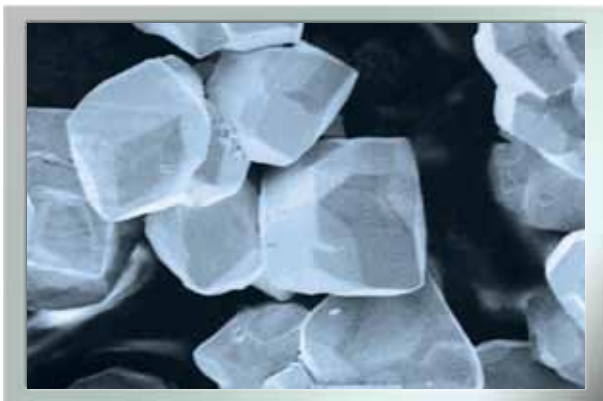
APPLICATION : Tungsten Carbide Powder, Heavy Alloy, Electrical Contacts, Diamond Tools, Wires etc.



Type: WP 05



Type: WP 35



Type: WP 250



Type: WP 35(Narrow & high peak distribution)

Type	F.S.S.S Size $\mu\text{m}$	Oxygen %, max	Scott Density $\text{g/in}^3$
WP 04	0.4 - 0.5	1.00	5.0 - 30
WP 05	0.5 - 0.6	0.80	5.0 - 35
WP 06	0.6 - 0.7	0.70	10 - 35
WP 08	0.7 - 0.9	0.50	20 - 35
WP 10	0.9 - 1.1	0.30	20 - 35
WP 12	1.1 - 1.5	0.20	20 - 40
WP 18	1.5 - 2.0	0.20	25 - 45
WP 23	2.0 - 2.5	0.15	30 - 55
WP 25	2.2 - 2.7	0.15	30 - 55
WP 30	2.7 - 3.2	0.15	30 - 55
WP 35	3.2 - 3.7	0.15	35 - 60
WP 40	3.7 - 4.4	0.15	35 - 60
WP 45	4.4 - 4.7	0.10	40 - 70
WP 50	4.7 - 5.5	0.10	45 - 75
WP 70	6.0 - 8.0	0.10	50 - 80
WP 85	8.0 - 9.0	0.10	55 - 85
WP 100	9 - 11	0.10	55 - 90
WP 130	11 - 15	0.05	60 - 90
WP 170	15 - 18	0.05	60 - 100
WP 200	18 - 22	0.05	70 - 100
WP 250	22 - 30	0.05	90 - 120
WP 350	30 - 40	0.05	110 - 150

• F.S.S.S size, Scott Density & Oxygen content can be adjusted to customer's request.

	Guaranteed Specification	Typical Analysis
W (exclude Oxygen)	> 99.9%	> 99.95%
Al	20 ppm Max	< 10 ppm
Ca	30	< 10
Co	10	< 10
Cr	50	< 20
Fe	100	< 50
Mg	10	< 5
Mn	10	< 5
Mo	100	< 10
Na	30	< 10
Pb	10	< 5
Si	30	< 10
Sn	20	< 10
C	100 150 *	50 *100

\* : WP 04 and WP 05 type

- Specific requirements can also be met.
- Standard Packing: Double polyethylene film bags inside a steel drum (50Kg, 100Kg, 200Kg & 250Kg on request).00Kg & 250Kg on request).
- Maximum lot size: 6,000kgs

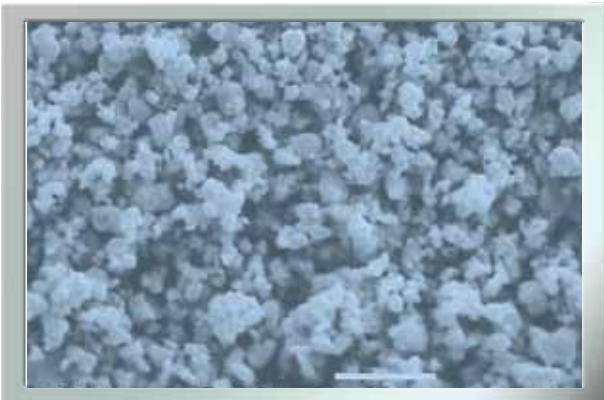


# TUNGSTEN CARBIDE POWDER (WC)

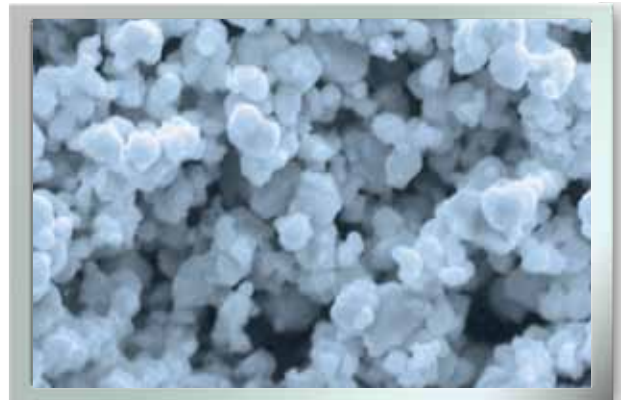
TaeguTec quality tungsten carbide powder(WC) is produced by carburization in a hydrogen atmosphere with a mixture of tungsten metal powder and pure black carbon. The resulting WC is suitable for a wide variety of manufacturing processes.



APPLICATION : Cemented Tungsten Carbide – Cutting Tools, Wear Parts, Roll & Die, Diamond Tools, Mining Tools etc.



Type: WC 06



Type: WC 13



Type: WC 45H



Type: WC 100H

## ● Ultra fine & Fine WC

Type	F.S.S.S Size $\mu\text{m}$	Total Carbon %	Free Carbon %, max	Oxygen %, max	Dopant
WC 04	0.4 - 0.5	6.12 - 6.20	0.08	0.80	Cr 0.8 - 0.9%
WC 05	0.5 - 0.6	6.12 - 6.20	0.08	0.50	Cr 0.8 - 0.9%
WC 06	0.6 - 0.7	6.10 - 6.18	0.07	0.40	
WC 07	0.7 - 0.8	6.10 - 6.18	0.07	0.40	
WC 08	0.8 - 0.9	6.10 - 6.18	0.07	0.30	

• F.S.S.S, total carbon and dopant can be adjusted to customer's request.

## ● Standard WC

Type	F.S.S.S Size $\mu\text{m}$	Total Carbon %	Free Carbon %, max	Oxygen %, max
WC 10	0.9 - 1.1	6.10 - 6.18	0.06	0.15
WC 13	1.1 - 1.5	6.10 - 6.18	0.06	0.15
WC 15	1.3 - 1.7	6.10 - 6.18	0.06	0.12
WC 18	1.7 - 2.0	6.10 - 6.18	0.06	0.10
WC 20	1.7 - 2.2	6.10 - 6.18	0.06	0.08
WC 25	2.2 - 2.7	6.10 - 6.18	0.06	0.06
WC 30	2.7 - 3.2	6.10 - 6.18	0.06	0.06
WC 35	3.2 - 3.7	6.10 - 6.18	0.06	0.06
WC 40	3.7 - 4.2	6.10 - 6.18	0.06	0.05
WC 45	4.2 - 4.7	6.10 - 6.18	0.06	0.05
WC 50	4.7 - 5.2	6.10 - 6.18	0.06	0.05
WC 55	5.2 - 5.7	6.10 - 6.18	0.06	0.05
WC 60	5.7 - 6.3	6.10 - 6.18	0.06	0.05

	Guaranteed Specification	Typical Analysis
Al	30 ppm Max	< 10 ppm
As	30	< 10
Ca	30	< 15
Co	200	< 100
Cr	100	< 50
Fe	300	< 200
Mg	20	< 5
Mn	20	< 10
Mo	100	< 50
Na	20	< 10
Ni	50	< 30
Pb	20	< 5
Si	30	10
Sn	20	10

- Specific requirements can also be met upon request.
- Standard Packing: Double polyethylene film bags inside a steel drum (50Kg, 100Kg, 200Kg & 250Kg on request).
- Maximum lot size: 6,000kgs



● **WC HT**(High Temperature)

Type	F.S.S.S Size $\mu\text{m}$	Total Carbon %	Free Carbon %, max	Oxygen %, max
WC 25 H	2.2 - 2.7	6.10 - 6.18	0.05	0.06
WC 30 H	2.7 - 3.2	6.10 - 6.18	0.05	0.06
WC 35 H	3.2 - 3.7	6.10 - 6.18	0.05	0.05
WC 40 H	3.7 - 4.2	6.10 - 6.18	0.05	0.05
WC 45 H	4.2 - 4.7	6.10 - 6.18	0.05	0.05
WC 50 H	4.7 - 5.2	6.10 - 6.18	0.05	0.05
WC 55 H	5.2 - 5.7	6.10 - 6.18	0.05	0.05
WC 60 H	5.7 - 6.2	6.10 - 6.18	0.05	0.05
WC 65 H	6.2 - 6.7	6.10 - 6.18	0.05	0.05
WC 70 H	6.7 - 8.0	6.10 - 6.18	0.05	0.05
WC 100 H	8.0 - 12.0	6.10 - 6.18	0.05	0.05
WC 150 H	12 - 17	6.10 - 6.18	0.05	0.03
WC 180 H	17 - 20	6.10 - 6.18	0.05	0.03
WC 200 H	18 - 23	6.10 - 6.18	0.05	0.03
WC 250 H	20 - 30	6.10 - 6.18	0.05	0.03
WC 350 H	30 - 40	6.10 - 6.18	0.05	0.03

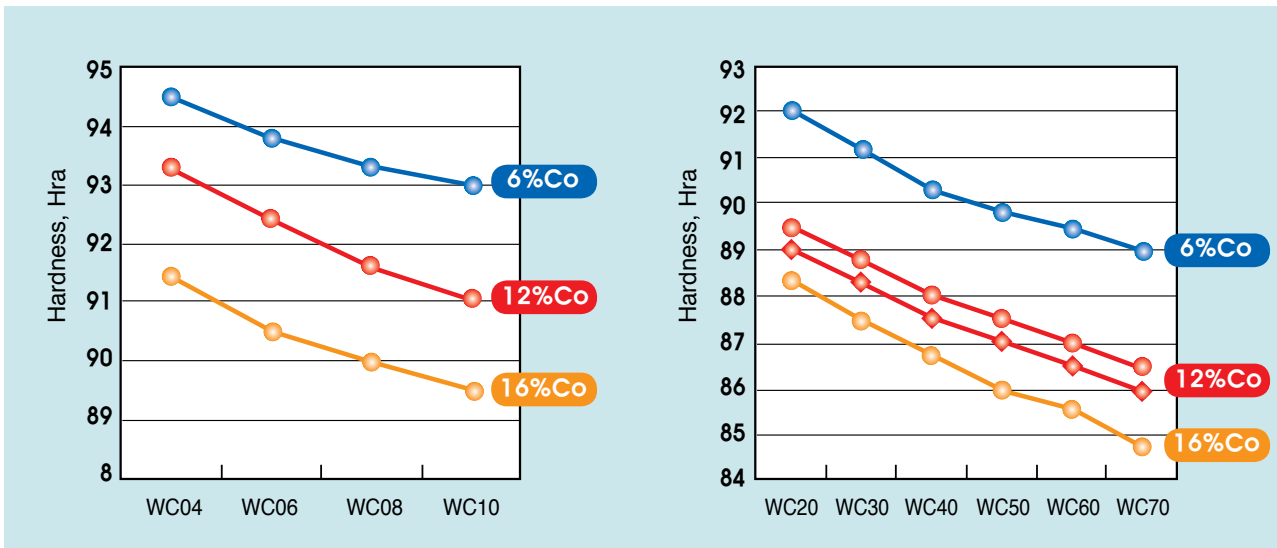
• F.S.S.S, total carbon and dopant can be adjusted to customer's request.

	Guaranteed Specification	Typical Analysis
Al	30 ppm Max	< 10 ppm
As	30	< 10
Ca	30	< 15
Co	200	< 100
Cr	100	< 50
Fe	300	< 200
Mg	20	< 5
Mn	20	< 10
Mo	100	< 50
Na	20	< 10
Ni	50	< 30
Pb	20	< 5
Si	30	10
Sn	20	10

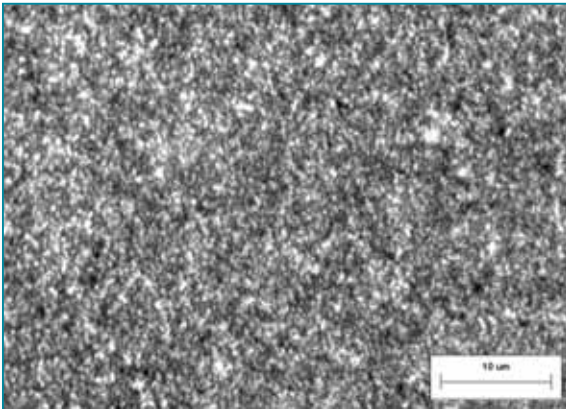
• Specific requirements can also be met upon request.

# Alloy Properties

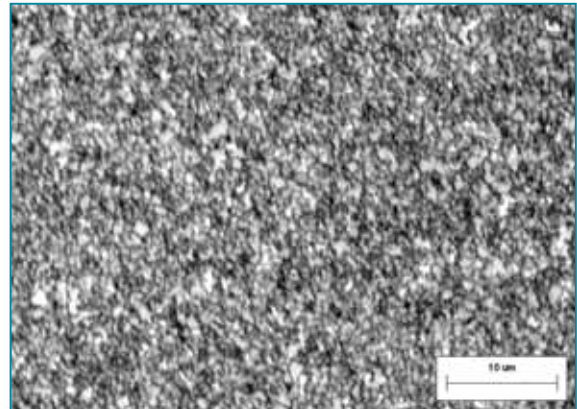
## ● Hardness by WC



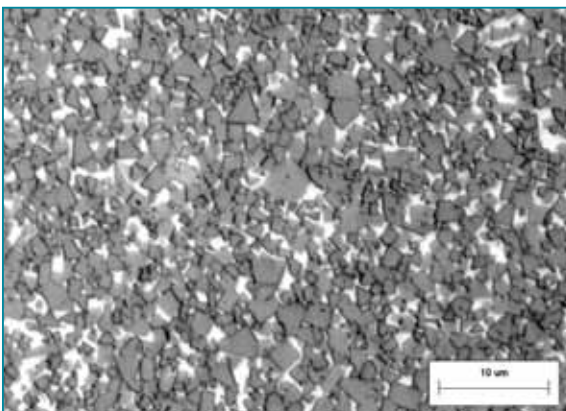
## ● Microstructure



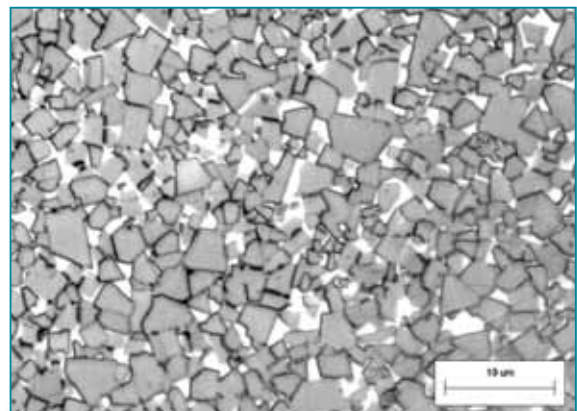
**WC 04** 9%Co, HRa 94.0



**WC 08** 10%Co, HRa 92.0



**WC 25** 9%Co, HRa 90.3



**WC 65 H** 9%Co, HRa 89.0

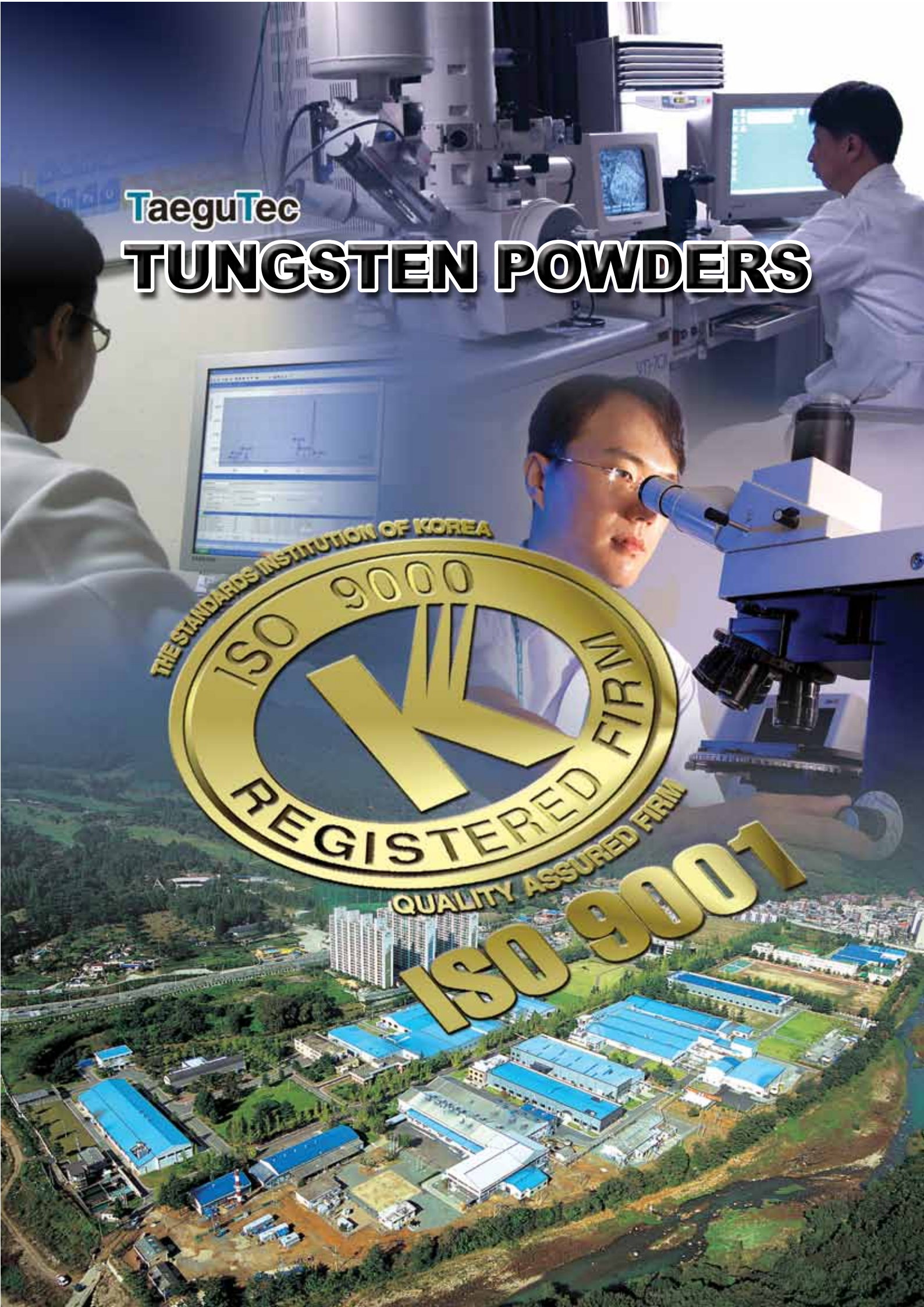


TaeguTec

# TUNGSTEN POWDERS



ISO 9001







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