

# Cobalt range

## A global supplier

- Eurotungstene supplies all types of binders to the Diamond Tool industry (Cobalt, NEXT®, Keen® and additives) from the most comprehensive product range in the Diamond Tool sector.

Founded in 1949, Eurotungstene is renowned for the high quality of its Cobalt powders and its extensive range of products.

Today the company offers a comprehensive range of pure Cobalt powders, WC-Co premixed powders, granulated pure Cobalt and premixed.

## Main advantages of the Cobalt range

- – **Excellent stability of grain size** and hardness over a wide range of sintering temperatures, which ensures good homogeneity in segment production.
- **Consistency**: sintering tests are made in our laboratory on every lot of powders.
- **Very weak reactivity with diamond.**
- **Special mechanical properties of the sintered segments**: high elastic limit and little plasticity, which ensure an **excellent diamond retention** during the cutting.

## The Cobalt range

- **Pure Cobalt**  
COUF (CO7106)  
COF (CO6105)  
COC (CO6101)  
COD (CO6102)  
COH (CO6106)

### Cobalt premixed WC-Co

ME1108 (10/90)  
ME1107 (20/80)  
ME1106 (30/70)  
ME1105 (40/60)  
ME1104 (50/50)  
ME1103 (60/40)  
ME1101 (75/25)

### Cobalt granules Pure Cobalt

COUF (CO5106 - 63/450µm)  
COD (CO5102 - 63/450µm)  
COD (CO5112 - 250/630µm)

### Cobalt premixed WC-Co (20/80)

ME5107 (63/450µm)  
ME5117 (250/630µm)

purecobalt

cobaltpremixed

cobaltgranules

  
eurotungstene®  
METAL POWDERS

a member of  
ERAMET

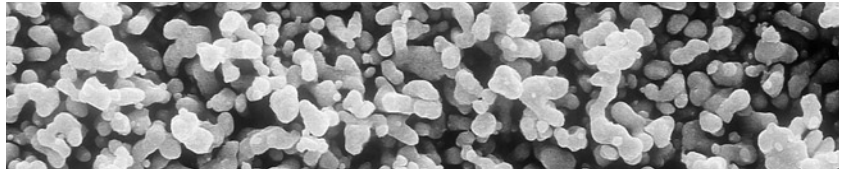


purecobalt

- **5 grades of Cobalt powders, specially designed for the Diamond Tool industry:**
  - Grain size from 0.90 to 3.50  $\mu\text{m}$ .
  - Hardness from 103HRB to 110HRB (hot pressing).

### COUF CO7106

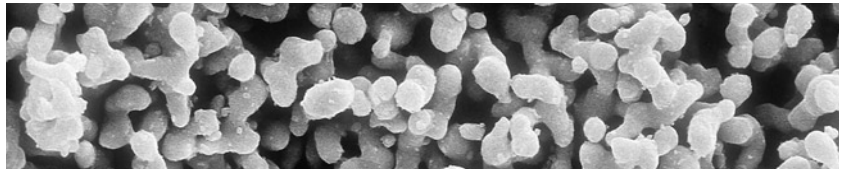
SEM x 5000  
(1 cm = 2  $\mu\text{m}$ )



*Fisher grain size ( $\mu\text{m}$ ): 0.90  $\pm$  0.15*

### COF CO6105

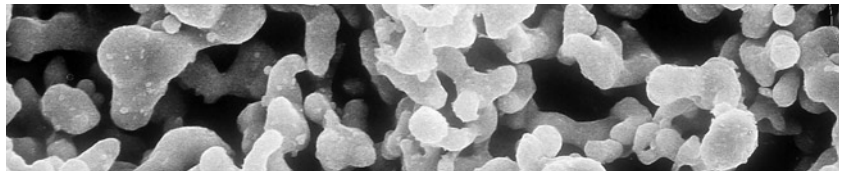
SEM x 5000  
(1 cm = 2  $\mu\text{m}$ )



*Fisher grain size ( $\mu\text{m}$ ): 1.25  $\pm$  0.20*

### COC CO6101

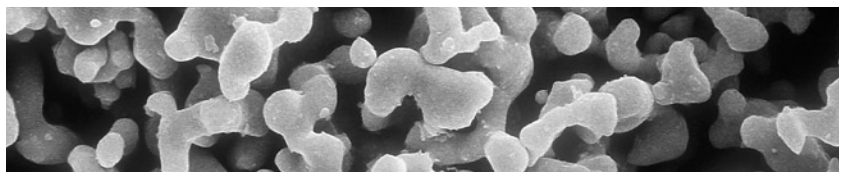
SEM x 5000  
(1 cm = 2  $\mu\text{m}$ )



*Fisher grain size ( $\mu\text{m}$ ): 1.60  $\pm$  0.15*

### COD CO6102

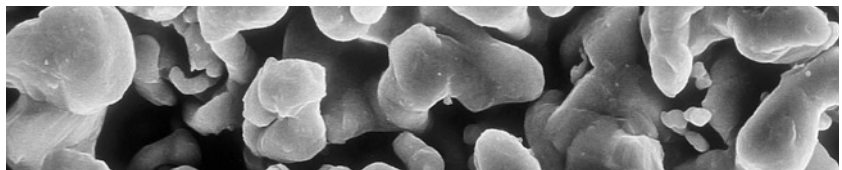
SEM x 5000  
(1 cm = 2  $\mu\text{m}$ )



*Fisher grain size ( $\mu\text{m}$ ): 1.80  $\pm$  0.20*

### COH CO6106

SEM x 5000  
(1 cm = 2  $\mu\text{m}$ )



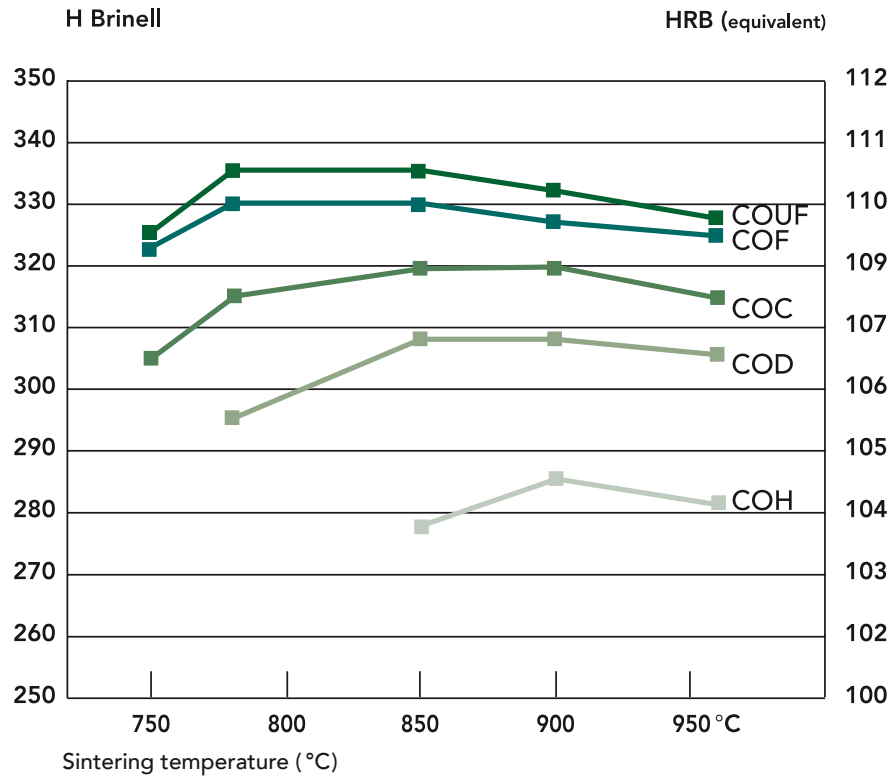
*Fisher grain size ( $\mu\text{m}$ ): 3.50  $\pm$  0.50*

## Hardness as a function of sintering temperature

(hot pressing)

**Stability of hardness** over a wide range of sintering temperatures.

**No grain growth** ensuring uniform segment production.

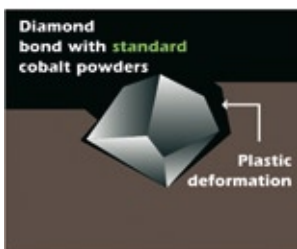


## Mechanical properties

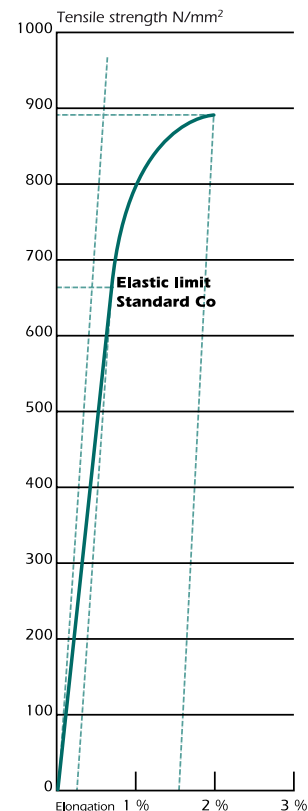
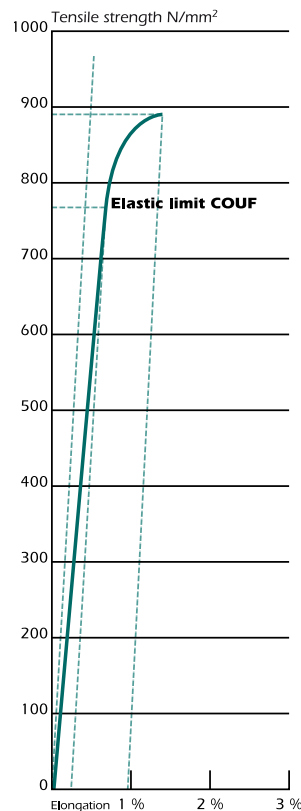
- Tension test in accordance with ASTM standards. High elastic limit and low plasticity ensure excellent diamond retention during cutting.



**Typical results COUF:**  
Elastic limit: 767 N/mm<sup>2</sup>  
Elongation: 0.96%



**Typical results standard Co:**  
Elastic limit: 663 N/mm<sup>2</sup>  
Elongation: 1.55%

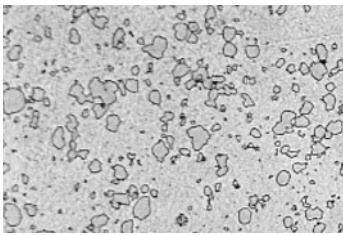




**cobalt**premixed

	ME1108	ME1107	ME1106	ME1105	ME1104	ME1103	ME1101
WC%	10	20	30	40	50	60	75
Co %	90	80	70	60	50	40	25
Recommended sintering temperature	850°C	950°C	1030°C	1060°C	1080°C	1130°C	1190°C
Typical hardness HV10	350	400	440	470	510	630	not measured
Equivalent hardness HB	340	390	420	450	490	610	-

Maximum variation is ± 1% in the premixed composition.



Metallography (x 500)  
of sintered WC-Co (20/80)

The presence of finely distributed WC enables the production of tools with higher hardness and greater wear resistance than with Cobalt alone.

**The standard components are :**

- Cobalt powder COF (CO6105).
- Tungsten carbide powder 3µm (CW5522).

Eurotungstene has developed a specially designed process to accommodate these two components, resulting in excellent homogeneity of each batch.



**cobalt**granules

- 2 grades of pure Cobalt powders and 1 grade of WC-Co premixed powders are available as granules of 63 to 450µm or 250 to 630µm.

**The main advantages of granules are :**

- Good flowability.
- Avoidance of dust generation during handling and processing.
- Higher apparent density.

**Packing**

- **Standard packing :**
  - Metal drums with inner polyethylene bag.

*Consult us for available drum size.*

**@bout**

- **Download at [www.eurotungstene.com](http://www.eurotungstene.com) (online catalogue):**
  - Technical data sheets.
  - Material Safety Data Sheets.

*Sintering certificates available upon request.*

