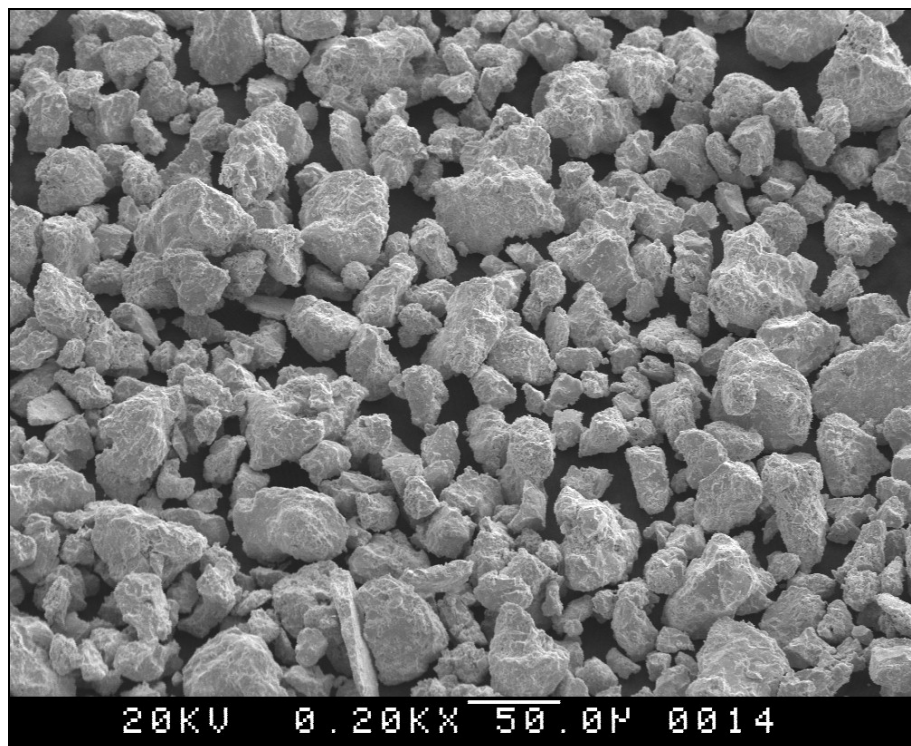


# HA 8109

## WC 9Co

Product Code: 328109  
**Technical Data Sheet**

Revision: # 002  
 Dated: 10/29/08



**Figure 1:** Typical Powder Morphology (SEM 200X)

### 1. PHYSICAL PROPERTIES

HA 8109 is fine grade agglomerated, sintered, and crushed powder. It produces dense, erosion resistant coatings with excellent wear properties at low temperatures.

<b>Molecular Formula</b>	<b>WC 9Co</b>
<b>Melting Point [°C]</b>	<b>1260</b>
<b>Apparent Density [g/cm<sup>3</sup>] ASTM B212</b>	<b>7.1 ± 1</b>

# HA 8109

## WC 9Co

Product Code: 328109  
Technical Data Sheet

Revision: # 002  
Dated: 10/29/08

---

## 2. CHEMICAL PROPERTIES

### 2.1. Typical Chemical Analysis

<u>Element</u>	<u>Weight Percent</u>
Tungsten	Balance
Carbon (total)	5.75
Cobalt	7.00
All Others	0.6

## 3. POWDER MORPHOLOGY AND PARTICLE SIZE DISTRIBUTION

### 3.1. Powder Morphology

- 3.1.1. Powder has irregular blocky shape as produced by agglomeration, sinter, and crushing processes.
- 3.1.2. Typical Powder Morphology using SEM is shown in Figure 1.

### 3.2. Particle Size Distribution

- 3.2.1. The typical powder size range measured with Tyler according to ASTM B214 is -270 mesh +10  $\mu\text{m}$
- 3.2.2. Table 1 shows the required and typical particle size distribution measured with Microtrac according to ASTM B822
- 3.2.3. Figure 2 shows the typical Microtrac particle size distribution graph

# HA 8109

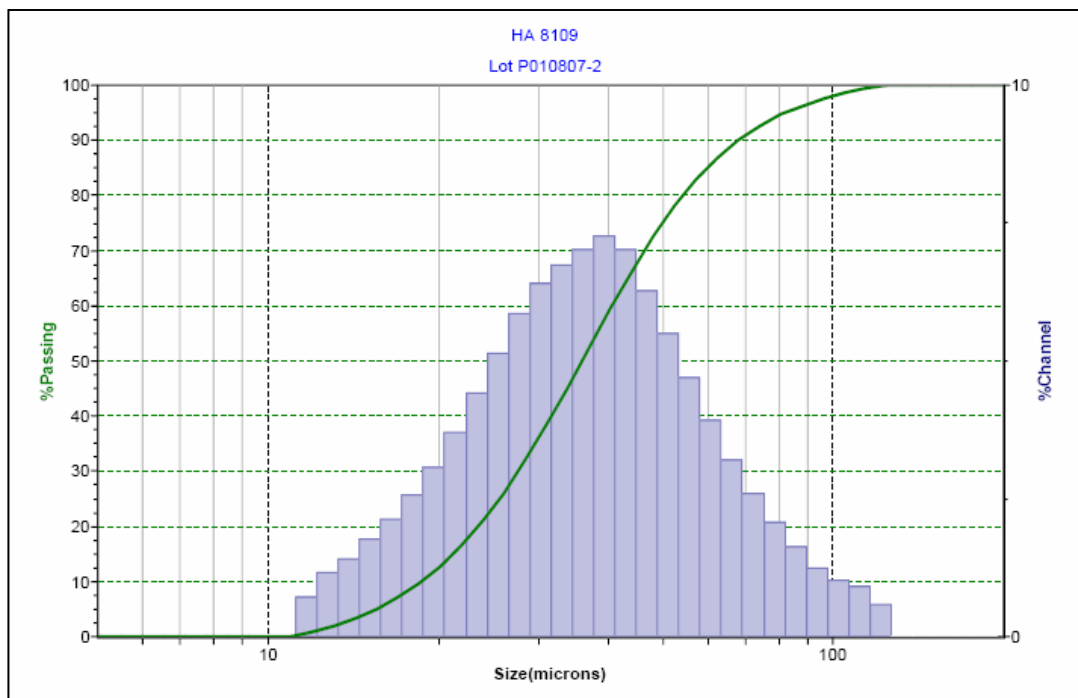
## WC 9Co

Product Code: 328109  
**Technical Data Sheet**

Revision: # 002  
 Dated: 10/29/08

**Table 1: Typical and Required Microtrac Particle Size Distribution**

<u>Percentile</u>	<u>Typical Particle Size</u>	<u>Mean</u>	<u>Required Particle Size</u>
[%]	[ $\mu\text{m}$ ]		
0.01	11.02	D <sub>10</sub>	10 - 20 $\mu\text{m}$
5.00	15.52		
10.00	18.64		
16.00	21.75	D <sub>50</sub>	30 - 40 $\mu\text{m}$
50.00	36.08		
84.00	58.50		
90.00	67.92	D <sub>90</sub>	55 - 70 $\mu\text{m}$
95.00	82.29		
99.99	124.20		



**Figure 2: Typical Microtrac Particle Size Distribution**