

# HA 8350

WC Co Cr 86/10/4

Product Code: 328350  
 Technical Data Sheet

Revision: # 002  
 Dated: 7/10/08



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

## 1. PHYSICAL PROPERTIES

HA 8350 is fine grade spray dried and sintered spherical powder. It produces dense, erosion resistant coatings with excellent wear properties at low temperatures.

<b>Molecular Formula</b>	<b>86 WC 10 Co 4 Cr</b>
<b>Melting Point [°C]</b>	<b>approx. 1250</b>
<b>Apparent Density [g/cm<sup>3</sup>] ASTM B212</b>	<b>4.0 ± 0.5</b>
<b>Hall Flow [sec/50g] ASTM B213</b>	<b>16 ± 3</b>

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## 2. CHEMICAL PROPERTIES

### 2.1. Typical Chemical Analysis

<u>Element</u>	<u>Weight Percent</u>
Tungsten	Balance
Carbon (total)	5.0 - 5.5
Cobalt	9.5 – 10.5
Chromium	3.5 – 4.5
Iron	< 0.10
All Others	< 0.5

## 3. POWDER MORPHOLOGY AND PARTICLE SIZE DISTRIBUTION

### 3.1. Powder Morphology

- 3.1.1. Powder has dense spherical shape as produced by spray-dry and sinter 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 -325 mesh +15  $\mu$ 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

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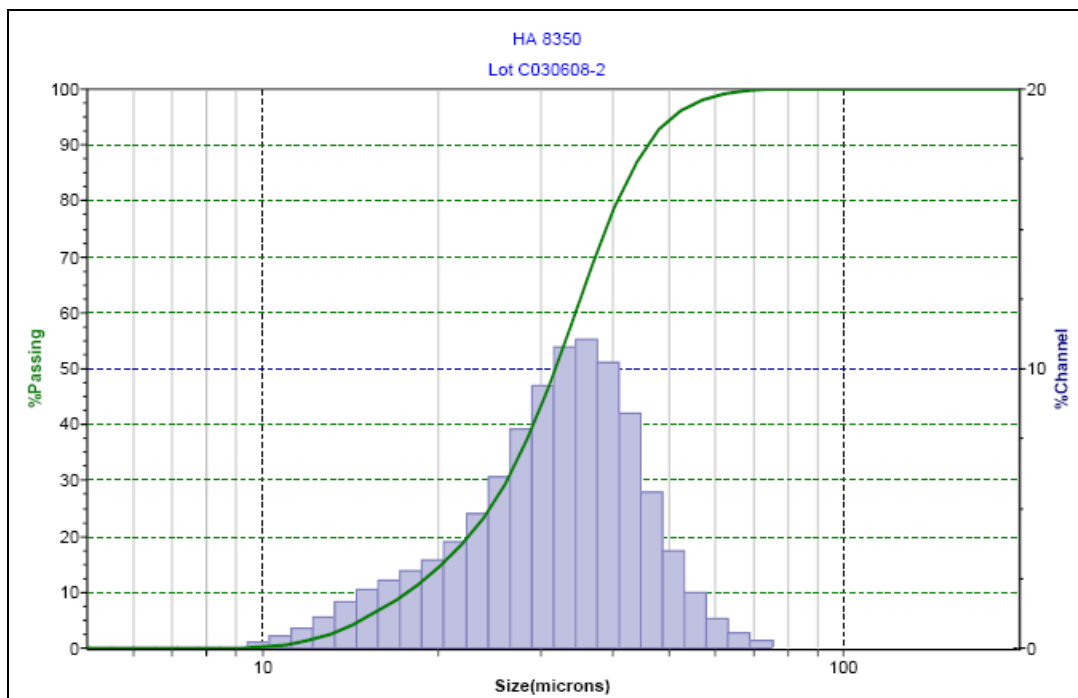
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**Table 1: Typical and Required Microtrac Particle Size Distribution**

<u>Percentile</u>	<u>Typical Particle Size</u>		<u>Mean</u>	<u>Required Particle Size</u>
[%]	[ $\mu\text{m}$ ]			
0.01	9.30		D <sub>10</sub>	15 - 25 $\mu\text{m}$
5.00	14.80			
10.00	17.70			
16.00	20.86		D <sub>50</sub>	27 - 37 $\mu\text{m}$
50.00	31.98			
84.00	42.50			
90.00	45.81		D <sub>90</sub>	45 - 55 $\mu\text{m}$
95.00	50.63			
99.99	73.65			



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