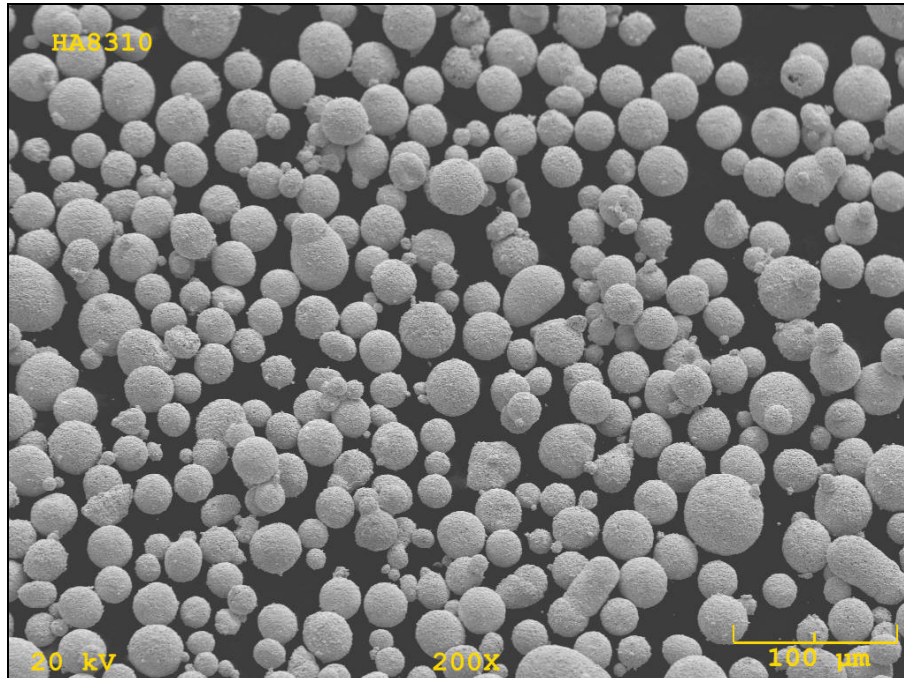


# HA 8310

WC 10Ni

Product Code: 328624  
**Technical Data Sheet**

Revision: # 002  
 Dated: 02/10/09



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

## 1. PHYSICAL PROPERTIES

HA 8310 is a fine grade spray dried and sintered, dense and spherical powder. It produces very dense and smooth, erosion and corrosion resistant coatings with excellent wear properties.

<b>Molecular Formula</b>	<b>WC 10Ni</b>
<b>Melting Point [°C]</b>	<b>1260</b>
<b>Hall Flow [s/50g]</b> ASTM B213	<b>15 ± 3</b>
<b>Apparent Density [g/cm<sup>3</sup>]</b> ASTM B212	<b>4.4 ± 0.6</b>

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## 2. CHEMICAL PROPERTIES

### 2.1. Typical Chemical Analysis

<u>Element</u>	<u>Weight Percent</u>
Tungsten [W]	Balance
Carbon (total) [C <sub>total</sub> ]	5.10 - 5.80
Nickel [Ni]	9.00 – 11.00
All Others	< 0.50

## 3. POWDER MORPHOLOGY AND PARTICLE SIZE DISTRIBUTION

### 3.1. Powder Morphology

- 3.1.1. Powder has mainly 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 µm
- 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 8310

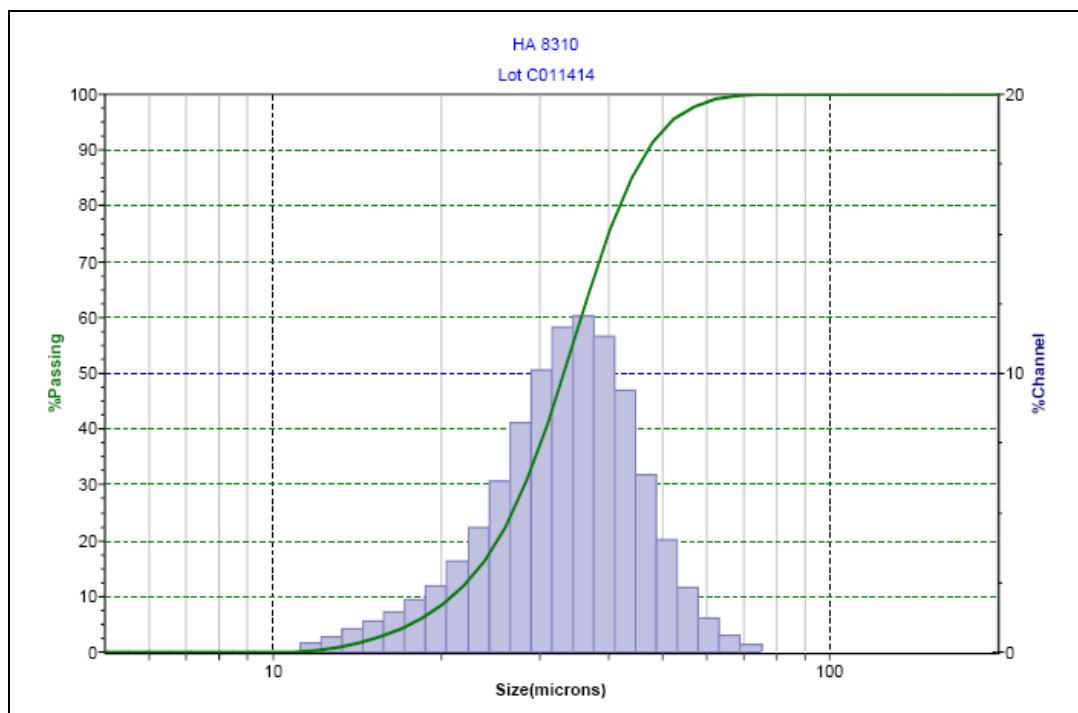
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**Table 1: Typical and Required Microtrac Particle Size Distribution**

<u>Percentile</u>	<u>Typical Particle Size</u>		<u>Mean</u>	<u>Required Particle Size</u>
[%]	[ $\mu\text{m}$ ]			
0.01	11.04		D <sub>10</sub>	15 - 25 $\mu\text{m}$
5.00	17.06			
10.00	21.08			
16.00	23.89		D <sub>50</sub>	30 - 40 $\mu\text{m}$
50.00	33.35			
84.00	43.49			
90.00	46.87		D <sub>90</sub>	45 - 60 $\mu\text{m}$
95.00	51.58			
99.99	73.67			



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