

HA 8356

WC 21Cr₃C₂ 7Ni

Product Code: 328356
Technical Data Sheet

Revision: # 001
 Dated: 01/21/09

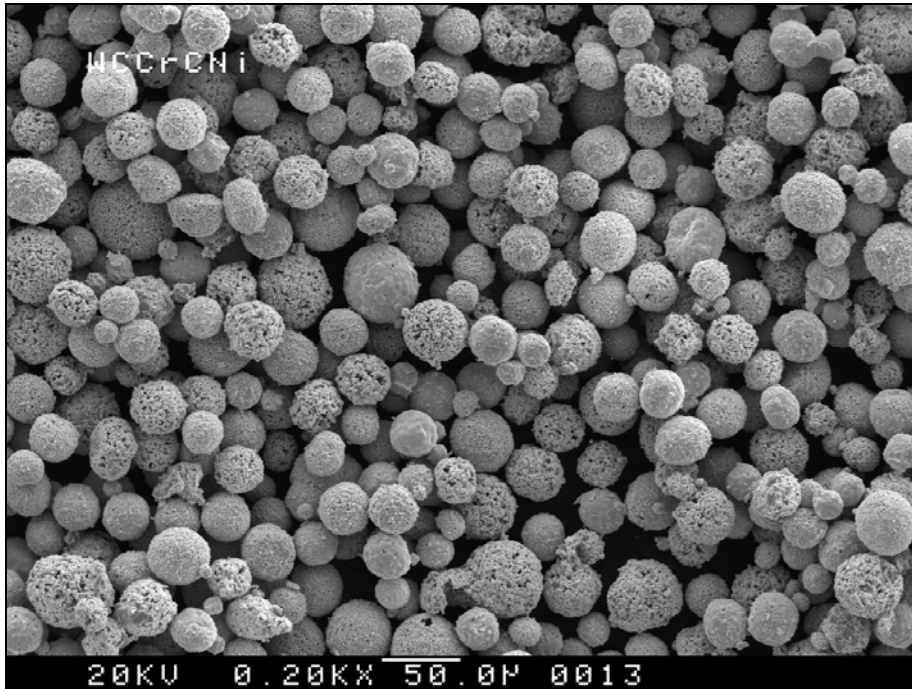


Figure 1: Typical Powder Morphology (SEM 200X)

1. PHYSICAL PROPERTIES

HA 8356 is fine grade spray dried and sintered, spherical powder. It produces very dense and smooth, erosion and corrosion resistant coatings with superior oxidation and excellent wear properties for the manufacturing industry.

Molecular Formula	WC 21Cr₃C₂ 7Ni
Melting Point [°C]	1260
Hall Flow [s/50g] ASTM B213	17 ± 3
Apparent Density [g/cm³] ASTM B212	4.4 ± 0.6

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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]	5.20 - 6.40
Chromiumcarbide [Cr ₃ C ₂]	19.00 – 21.00
Nickel [Ni]	5.00 – 8.00
Cobalt [Co]	< 0.50
Iron [Fe]	< 0.50
All Others	< 1.00

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

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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>
[%]	[μm]			
0.01	15.58		D ₁₀	15 - 25 μm
5.00	21.14			
10.00	23.57			
16.00	25.69		D ₅₀	30 - 40 μm
50.00	34.31			
84.00	45.41			
90.00	49.40		D ₉₀	45 - 60 μm
95.00	54.93			
99.99	73.86			

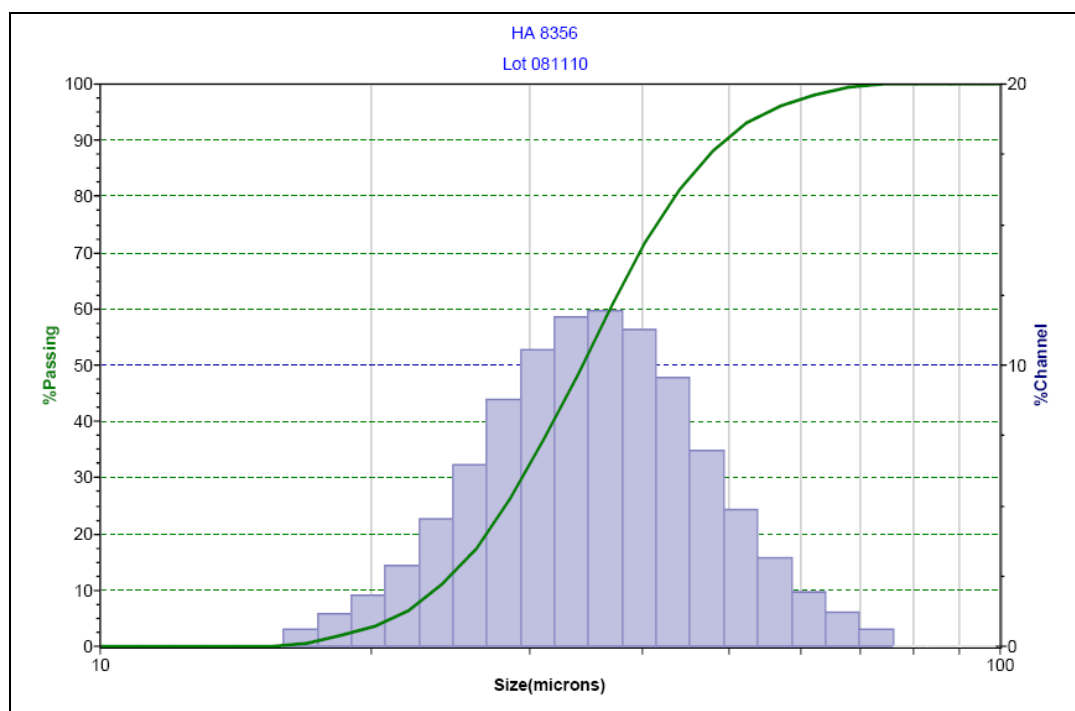


Figure 2: Typical Microtrac Particle Size Distribution