Advanced Material Specialist, Inc.

HA 8343

WC 17Co

Product Code: 328343
Technical Data Sheet

Revision: # 002
Dated: 07/22/08

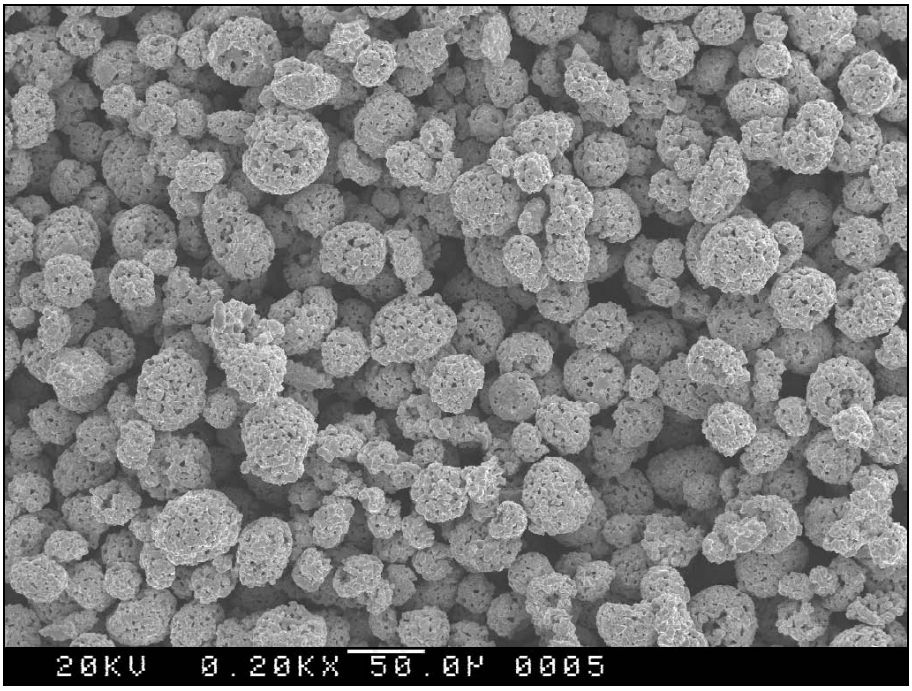

Figure 1: Typical Powder Morphology (SEM 200X)

1. PHYSICAL PROPERTIES

HA 8109 is fine grade agglomerated, sintered powder. It produces very dense and smooth, erosion resistant coatings with excellent wear properties for the turbine industry.

Molecular Formula	**WC 17Co**
Melting Point [°C]	**1260**
Hall Flow [s/50g] ASTM B213	**10 - 20**
Apparent Density [g/cm^3] ASTM B212	**4.5 ± 2**

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2. CHEMICAL PROPERTIES

2.1. Typical Chemical Analysis

Element	Weight Percent
Tungsten	Balance
Carbon (total)	5.3
Cobalt	16.90
Iron	0.026
All Others	0.10

3. POWDER MORPHOLOGY AND PARTICLE SIZE DISTRIBUTION

3.1. Powder Morphology

3.1.1. Powder has mainly spherical shape as produced by agglomeration 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 +10 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**

Percentile	Typical Particle Size		Mean	Required Particle Size
[%]	[µm]			
0.01	11.05		D_{10}	15 - 25 µm
5.00	17.21			
10.00	20.06			
16.00	22.71		D_{50}	25 - 35 µm
50.00	34.32			
84.00	47.93			
90.00	52.27		D_{90}	40 - 55 µm
95.00	58.33			
99.99	87.46			

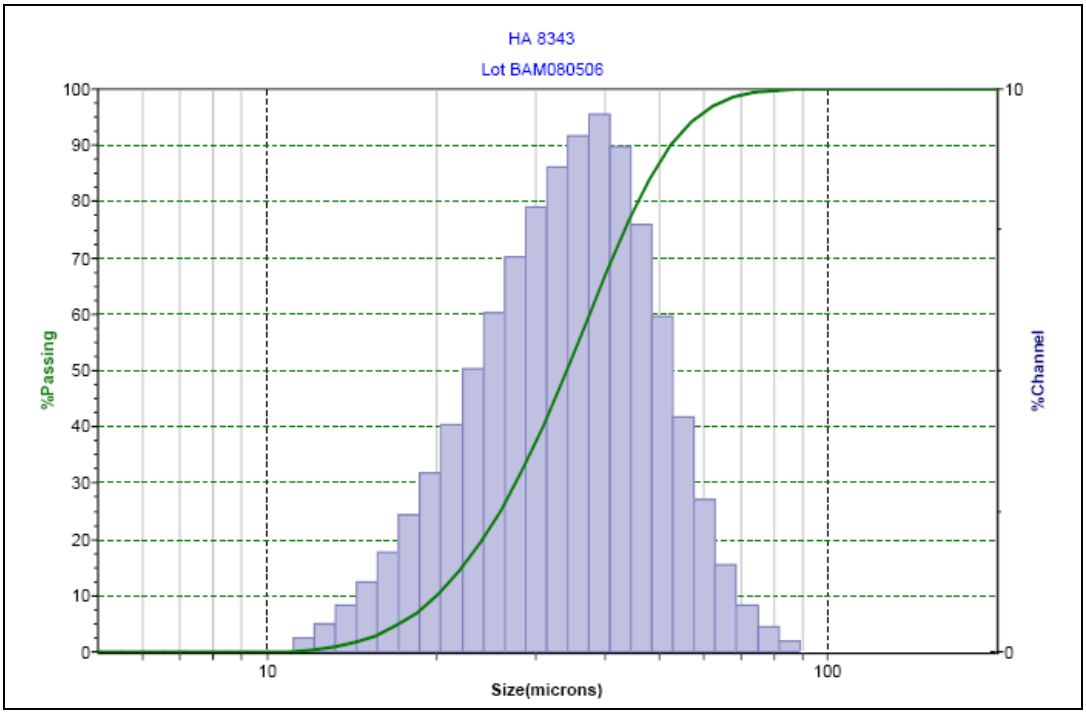

Figure 2: **Typical Microtrac Particle Size Distribution**