Advanced Material Specialists, Inc.

HA 8331

WC-NiCrFeSiB Blend

Product Code: 008
Technical Data Sheet

Revision: # 000
Dated: 08/18/08

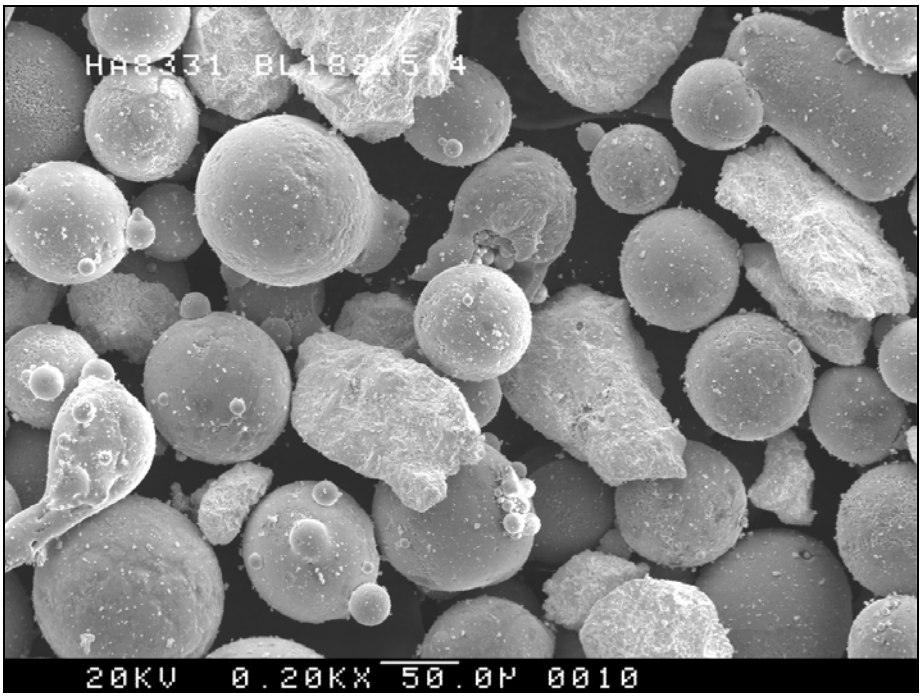

Figure 1: **Typical Powder Morphology (SEM 200X)**

1. PHYSICAL PROPERTIES

HA 8331 is a special blend of fine 35% tungsten carbide powder and 65% fine self-fluxing, nickel-chromium alloy powder.

Formula	**35 WC-Co / 65 NiCrFeSiB**
Name	**Tungsten Carbide / Nickel self-fluxing Alloy**
Product Description	**Blended**
Melting Point [°C]	**1,040**
Apparent Density (typical) [g/cm^3] ASTM B212	**4.6**
Hall Flow (typical) [sec/50g] ASTM B213	**15**

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2. CHEMICAL PROPERTIES

2.1. Typical Chemical Analysis

WC-Co			NiCrFeSiB	
Element	**Weight Percent**		**Element**	**Weight Percent**
W	Balance		Ni	Balance
Co	11.50%		Cr	14.55 %
Fe	0.85 %		Fe	4.15 %
C	4.07 %		Si	4.65 %
			B	3.06%
			Cu	2.26 %
			Mo	2.13 %
			Co	0.03
			W	0
			C	0.63%

3. POWDER MORPHOLOGY AND PARTICLE SIZE DISTRIBUTION

3.1. Powder Morphology

3.1.1. Powder has spherical shape as produced by atomization, 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 -120 mesh +325 mesh

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	26.34		D_{10}	55 - 65 µm
5.00	52.96			
10.00	60.24			
16.00	65.04		D_{50}	75 - 85 µm
50.00	81.34			
84.00	101.80			
90.00	109.90		D_{90}	105 - 115 µm
95.00	124.20			
99.99	247.30			

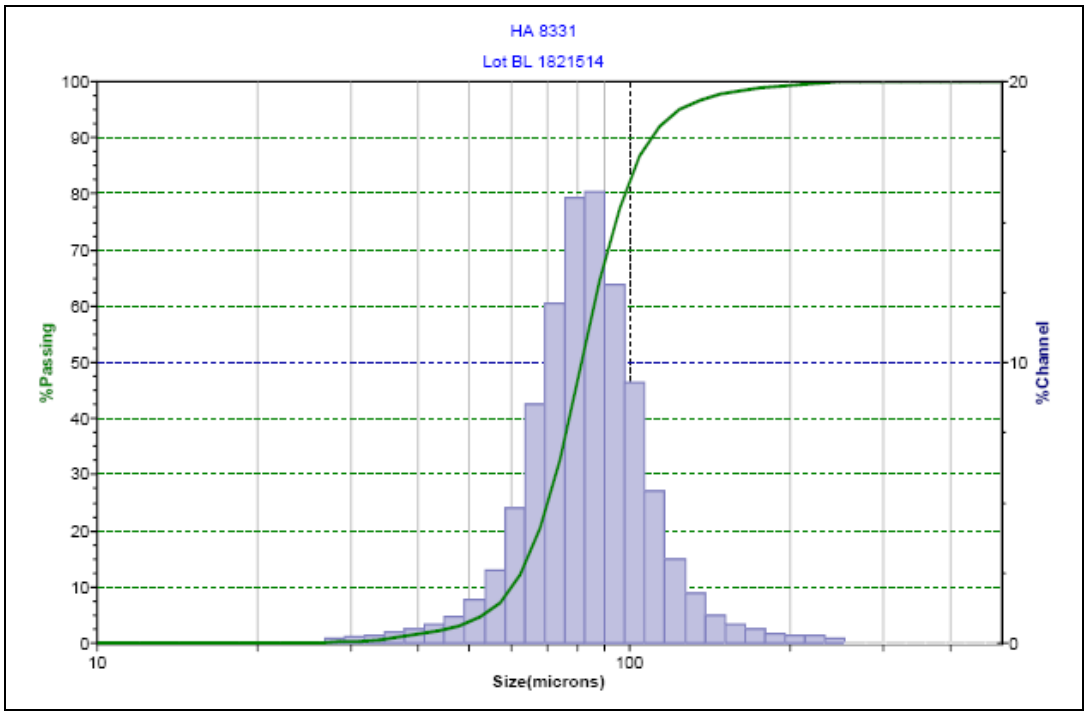

Figure 2: **Typical Microtrac Particle Size Distribution**