

HA 8114-1

WC-Co 88-12

Product Code: 328114
Technical Data Sheet

Revision: # 003
Dated: 9/12/12

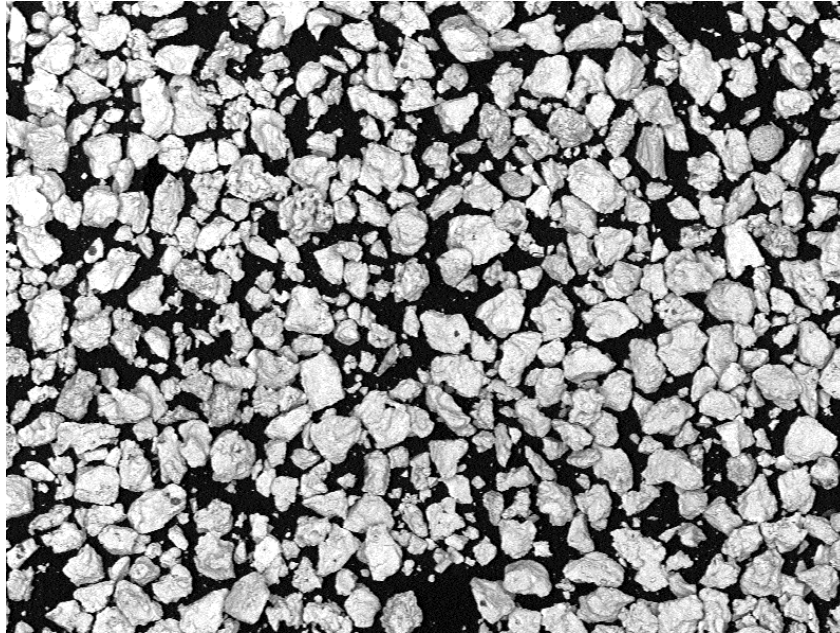


Figure 1: Typical Powder Morphology (SEM 200X)

1. PHYSICAL PROPERTIES

Formula	WC-Co 88-12
Name	HA 8114-1
Product Description	Tungsten Carbide
Melting Point [°C]	1,480 °C
Apparent Density [g/cm³] ASTM B212	5.0 – 8.0
Hall Flow [sec/50g] ASTM B213	6.5 – 12.5

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2. CHEMICAL PROPERTIES

2.1. Typical Chemical Analysis

Element	Weight Percent
W	Bal.
C	4.00 – 5.80
Co	10.0 – 12.50
Fe	<2.00
TAO	<1.00

3. POWDER MORPHOLOGY AND PARTICLE SIZE DISTRIBUTION

3.1. Powder Morphology

- 3.1.1. Powder has predominantly irregular shape.
- 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 US Mesh according to ASTM B214 is -325 mesh + 15 μm .
- 3.2.2. Table 1 shows the typical particle size distribution measured with Microtrac according to ASTM B822
- 3.2.3. Figure 2 shows the typical Microtrac particle size distribution graph

Table 1: Typical Microtrac Particle Size Distribution

Mean	Diameter
D ₁₀	15 - 33 μm
D ₅₀	33 - 45 μm
D ₉₀	50 - 67 μm

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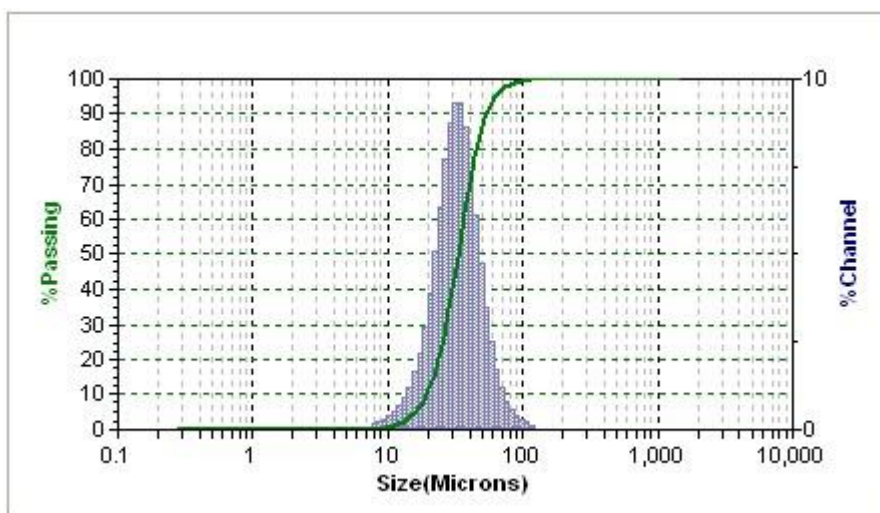


Figure 2: Typical Microtrac Particle Size Distribution

4. Coating Physical Properties

Hardness	1000-1150 DPH	87-94 R _{15N}
Porosity	< 2 % (as sprayed)	< 2 % (as sprayed)
Melting Point	2,700°F	1,482°C

5. APPLICATION

HA 8114-1 is a crush and sintered Tungsten Cobalt Carbide powder designed for the HVOF process. Coatings sprayed with HA 8114-1 are resistant to abrasion, erosion, hammer wear loading and provide good fretting resistance. The surface finish of HA 8114-1 coatings provide a good gripper surface as-sprayed but can be ground to a low RMS for sliding wear applications.