

HA 1601

Al 12Si 40Polyester

Product Code: 008
Technical Data Sheet

Revision: # 000
 Dated: 07/16/09

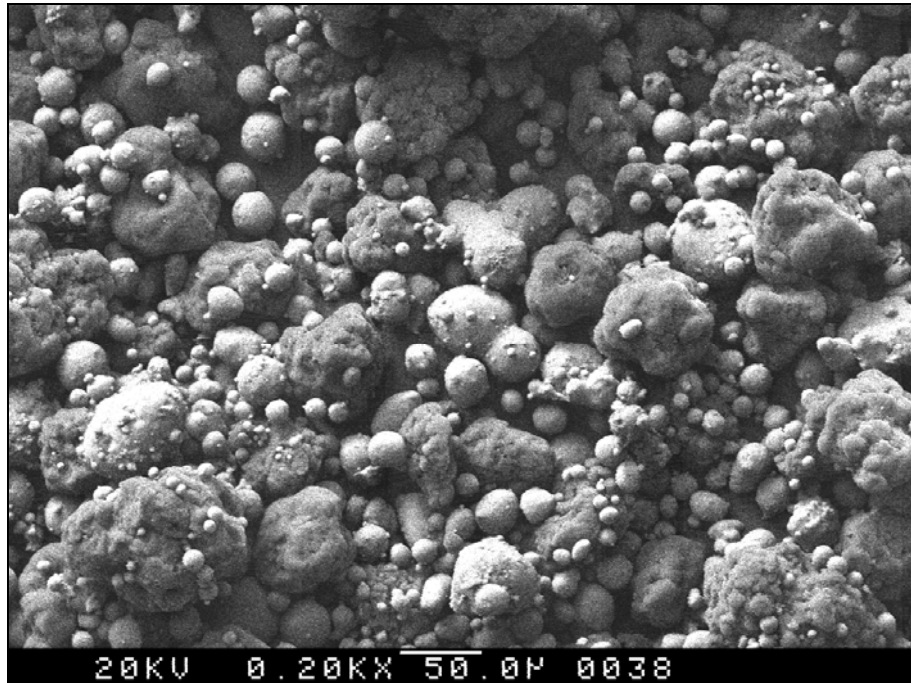


Figure 1: Typical Powder Morphology (SEM 200X)

1. PHYSICAL PROPERTIES

HA 1601 is a special blend of Al-12Si and Polyester powders to produce high quality abrasible coatings for the compressor section of jet engines. Suitable for operating temperatures up to 325°C (617°F).

Molecular Formula	Al 12Si + 40 Polyester
Melting Point [°C]	Softens at 425°C
Hall Flow [s/50g] ASTM B213	Not free flowing
Apparent Density [g/cm³] ASTM B212	1.0 ± 0.3

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2. CHEMICAL PROPERTIES

2.1. Typical Chemical Analysis

Aluminum Alloy (60 wt%)		Polyester (40wt%)	
Element	Weight Percent	Element	Weight Percent
Aluminum	Remainder	Completely Aromatic Polyester System	100 %
Silicon	11.00 – 13.00%		
Iron	< 0.80%		
Copper	< 0.30%		
All Others	< 0.60%		

3. POWDER MORPHOLOGY AND PARTICLE SIZE DISTRIBUTION

3.1. Powder Morphology

3.1.1. Powder has mainly spherical shape as produced by blending 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 +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

<u>Percentile</u>	<u>Typical Particle Size</u>		<u>Mean</u>	<u>Required Particle Size</u>
[%]	[μm]			
0.01	7.84		D ₁₀	15 - 25 μm
5.00	16.08			
10.00	21.16			
16.00	29.13		D ₅₀	50 - 70 μm
50.00	61.98			
84.00	95.18			
90.00	113.2		D ₉₀	95 - 120 μm
95.00	155.4			
99.99	493.8			

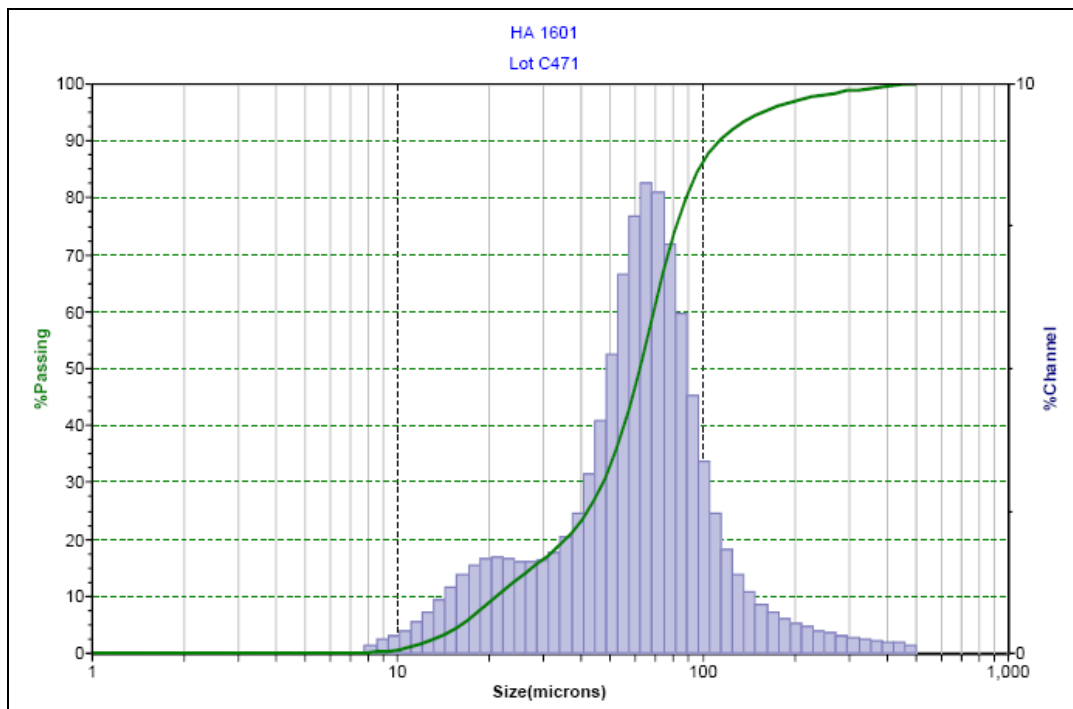


Figure 2: Typical Microtrac Particle Size Distribution