

HA 9197-2

Pure Silicon

Product Code: 109106-2
Technical Data Sheet

Revision: # 002
 Dated: 01/12/09

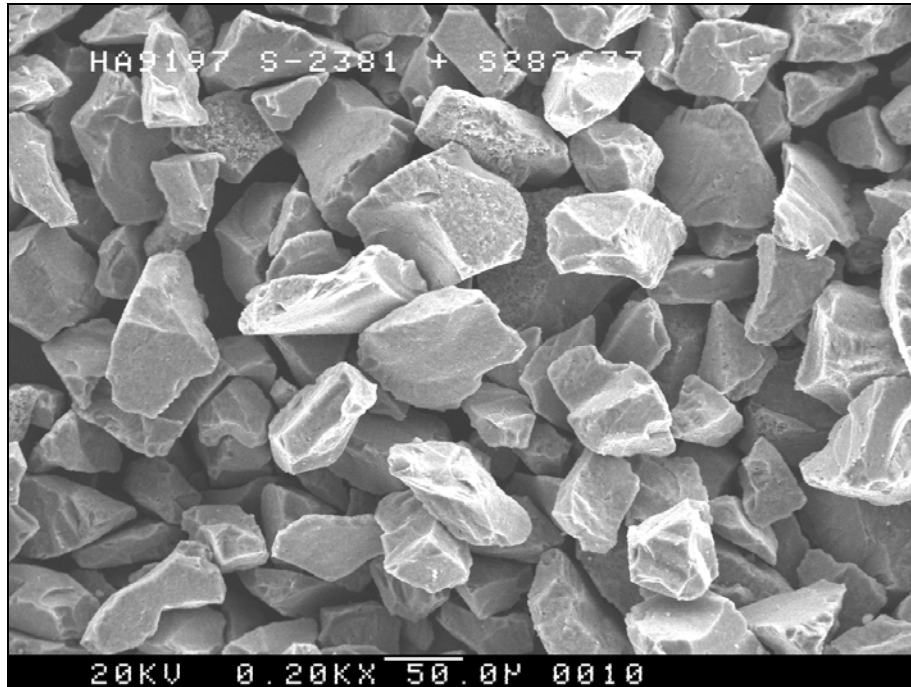


Figure 1: Typical Powder Morphology (SEM 200X)

1. PHYSICAL PROPERTIES

HAI's pure Silicon Thermal Spray Powder, HA 9197-2, is a crushed angular shaped powder manufactured to meet stringent semi-conductor industry requirements.

Molecular Formula	Si
CAS #	7440-21-3
Melting Point [°C]	1,410
Crystal Structure	Amorphous
Apparent Density [g/cm³] ASTM B212	0.98 ± 0.2

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2. CHEMICAL PROPERTIES

2.1. Typical Chemical Analysis

<u>Element</u>	<u>Weight Percent</u>
Silicon [Si]	99.5 min.
Carbon [C]	0.005
Aluminum [Al]	0.180
Boron [B]	0.003
Calcium [Ca]	0.033
Iron [Fe]	0.130
Phosphorous [P]	0.003
Titanium [Ti]	0.020

3. POWDER MORPHOLOGY AND PARTICLE SIZE DISTRIBUTION

3.1. Powder Morphology

- 3.1.1. Powder has an angular shape as produced by the fused and crushed process
- 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

<u>Percentile</u>	<u>Typical Particle Size</u>		<u>Mean</u>	<u>Required Particle Size</u>
[%]	[μm]			
0.01	22.12		D ₁₀	35 - 60 μm
5.00	44.25			
10.00	57.21			
16.00	66.23		D ₅₀	65 - 95 μm
50.00	92.73			
84.00	125.9			
90.00	139.9		D ₉₀	120 - 140 μm
95.00	162.9			
99.99	294.5			

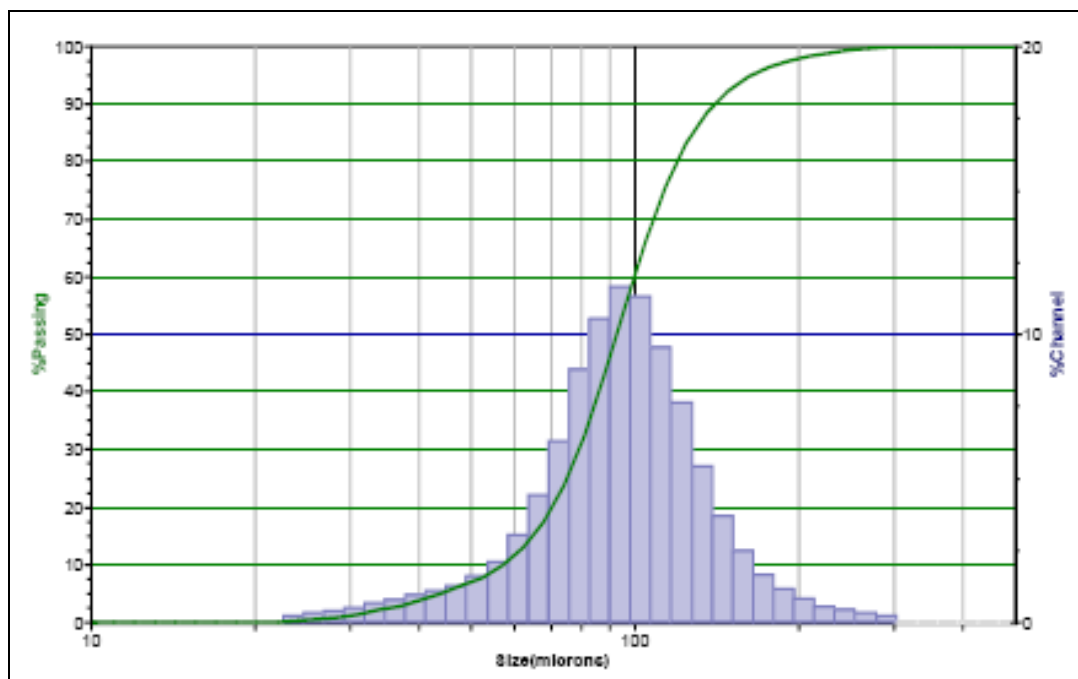


Figure 2: Typical Microtrac Particle Size Distribution