Advanced Material Specialists, Inc.

HA 9918-1

CP TITANIUM (Ti)

Product Code: 109918-1
Technical Data Sheet

Revision: # 002
Dated: 12/12/12

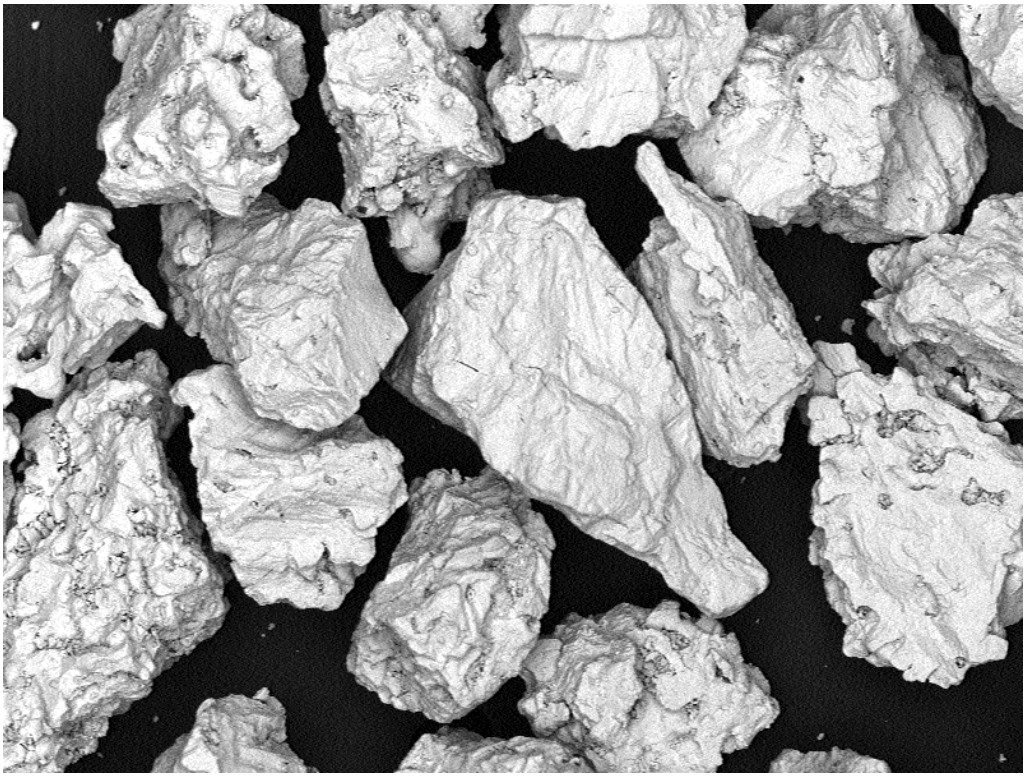

Figure 1: Typical Powder Morphology (SEM 200X)

1. PHYSICAL PROPERTIES

HA 9918-1 is a coarse commercially pure (CP) Titanium Sponge powder, manufactured using hydride-dehydride processing. Coatings formed from these Titanium powders are used for improving tissue attachment to medical implants.

Product Description	**99.3% Pure Titanium**
Melting Point [°C]	**1,660**
Apparent Density (typical) [g/cm^3] ASTM B212	**1.4 - 2.4**
Hall Flow (typical) [sec/50g] ASTM B213	**30.0 – 40.0**

Advanced Material Specialists, Inc.

HA 9918-1

CP TITANIUM (Ti)

Product Code: 109918-1
Technical Data Sheet

Revision: # 002
Dated: 12/12/12

2. CHEMICAL PROPERTIES

2.1. Typical Chemical Analysis

Element	Ti	Al	O	Fe	C	H	N
Max Weight %	Bal.	0.05	0.40	0.15	0.03	0.03	0.02
Min Weight %	Bal.	0.00	0.00	0.00	0.00	0.00	0.00
Element	Si	Cl	Na				
Max Weight %	0.04	0.20	0.50				
Min Weight %	0.00	0.00	0.00				

The powder meets the chemical requirements of ASTM F 1580-07 Standard Specification for Titanium powders for coatings of surgical implants.

3. POWDER MORPHOLOGY AND PARTICLE SIZE DISTRIBUTION

3.1. Powder Morphology

3.1.1. Powder has irregular and porous shape (sponge) as produced by the Kroll process with post hydriding-dehydriding and crushing or milling 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 US Mesh according to ASTM B214-07 is -60+100 mesh. Table 1 shows the typical weight percent distribution in accordance to ASTM B214-07.

3.2.2. Figure 2 shows the typical particle size distribution measured with Microtrac according to ASTM B822-10

Advanced Material Specialists, Inc.

HA 9918-1

CP TITANIUM (Ti)

Product Code: 109918-1
Technical Data Sheet

Revision: # 002
Dated: 12/12/12

Table 1: **Typical and Required Weight Percent Particle Distribution**

Mesh Size	Particle Size	Maximum Percentage	Minimum Percentage
+60	+250 µm	2.0%	0.0%
+80	+177 µm	100.0%	80.0%
+100	+149 µm	20.0%	10.0%
-100	-149 µm	1.0%	0.0%

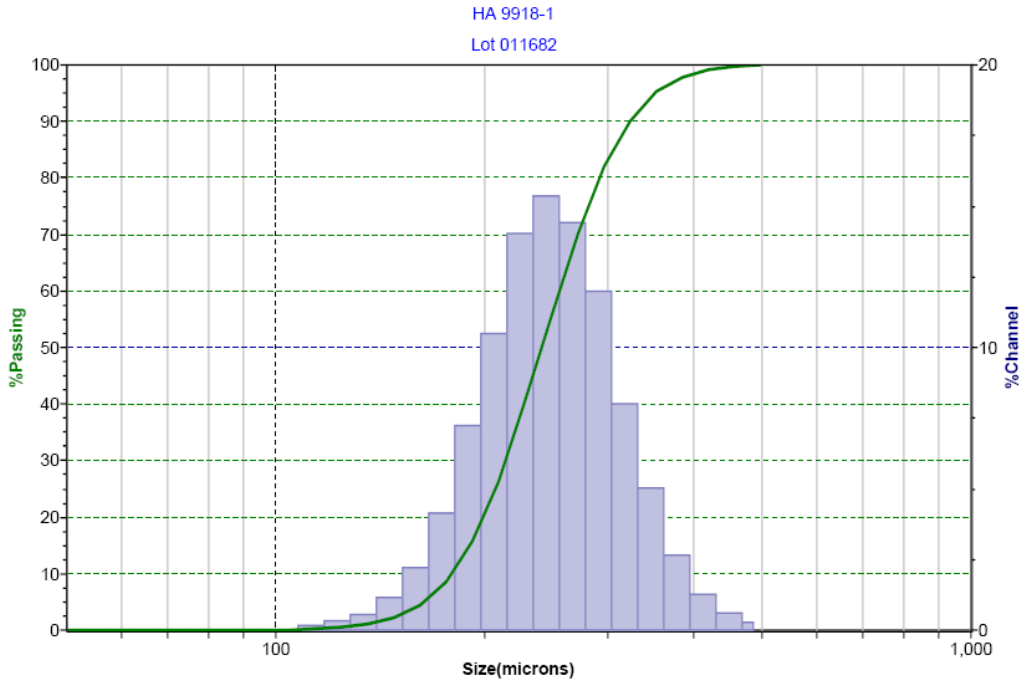

Figure 2: **Typical Microtrac Particle Size Distribution**