Advanced Material Specialists, Inc.

HA 9103

ZrO_2 – 22% MgO

Product Code: 439103
Technical Data Sheet

Revision: # 000
Dated: 04/14/09

1. PHYSICAL PROPERTIES

HA 9103 is a Fused and Crushed Magnesium Stabilized Zirconia powder for thermal barrier coatings

Molecular Formula	**ZrO_2 – 22% MgO**
CAS #	**12032-31-4**
Melting Point [°C]	**2,150**
Apparent Density [g/cm^3] ASTM B212-89	**>2.0**
Hall Flow [sec./50g] ASTM B213-90	**>30**

2. CHEMICAL PROPERTIES

2.1. Typical Chemical Analysis

Element	**Weight Percent**
ZrO_2	Balance
MgO	19.5 – 24.0
Al_2O_3	< 1.00
Fe_2O_3	< 0.50
SiO_2	< 0.50
TiO_2	< 0.50
CaO	< 1.50
HfO_2	< 2.50

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3. POWDER MORPHOLOGY AND PARTICLE SIZE DISTRIBUTION

3.1. Powder Morphology

3.1.1. Powder has irregular, angular shape as produced by the crushing processes.

3.1.2. Typical Powder Morphology using SEM (Not Shown)

3.2. Particle Size Distribution

3.2.1. Table 1 shows typical powder size range measured with Tyler according to ASTM B214 is -200 mesh

Table 1: Typical Sieve Particle Size Distribution

Sieve (Mesh)	Min.	Max.
+200	-	1.0
-200/+270	-	7.0
-270/+325	15	45
-325	55	-

3.2.2. Table 2 shows the required and typical particle size distribution measured with Microtrac according to ASTM B822.

Table 2: Typical MicroTrac Particle Size Distribution

Size (um)	Min.	Max.
-125	100	-
-88	90	-
-62	72	-
-44	40	100
-31	17	64
-22	-	37
-16	-	22
-11	-	9