Material Data Sheet

With over 20 years of experience in the manufacture of ceramic cores, DAI Ceramics, Inc. is at the cutting edge of ceramic core technology.

DAI has significant experience in the manufacture of complex geometry cores used in the casting of equiax and high performance DS and SC gas turbine engine components for both aerospace and industrial applications.

As a leading provider of ceramic cores, DAI maintains an extensive quality control and R&D lab to ensure it's materials meet specification and to assist with development of tomorrow's high performance core materials.

The information and data presented herein are typical or average values and are not a guarantee of maximum or minimum values. Applications specifically suggested for material described herein are made solely for the purpose of illustration to enable the reader to make his own evaluation and are not intended as warranties, either express or implied, of fitness for these or other purposes. There is no representation that the recipient of this literature will receive updated editions as they become available.

121A Core Material

Application:
Silica / Zircon core with good high temperature stability. Used for large core geometries such as IGT type cores.

Material Composition (%)

Silica (SiO_2)	88.5
Zircon ($ZrSiO_4$)	11.5
Alumina (Al_2O_3)	-

Trace Element Analysis

Element	Typical ppm
Lead (Pb)	< 10
Bismuth (Bi)	< 0.5
Silver (Ag)	< 10
Antimony (Sb)	< 5
Zinc (Zn)	< 5
Tin (Sn)	< 15
Iron (Fe)	< 100

% Cristobalite

As fired	9
After 60 min at 2300°F	11

% Process Shrinkage (Mold to fired)

General	0.7

Modulus of Rupture (MOR)

Ceramic only @ RT	2100 psi
Impregnated ceramic @ RT	4400 psi

% Thermal Expansion

@ 1000°C	0.100
@ 1260°C	-0.067

Physical Properties

Bulk density (g/cc)	1.75
Apparent density (g/cc)	2.36
Porosity (vol %)	25.70

Creep/Sag Test

After 60 min @ 2300°F (in.)	0.045

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