Morgan Advanced Materials

CERTECH

DATA SHEET

K-120

Ceramic Core Material

Description

Silica-zircon core type with an intermediate particle size distribution and excellent high temperature stability. Used for high temperature preheat process in Equiax castings, for large land-based turbines, and for DS/SX applications where a silica/zircon composition is a better match to the casting process than an all silica composition.

Major Chemistry

Silica (SiO_2), %	74
Zircon ($ZrSiO_4$), %	24
Alumina (Al_2O_3), %	1

Trace Element Analysis

Iron (Fe), ppm	< 900
Bismuth (Bi), ppm	< 1
Lead (Pb), ppm	< 25
Silver (Ag), ppm	< 25
Antimony (Sb), ppm	< 25
Tin (Sn), ppm	< 25
Zinc (Zn), ppm	< 50

Physical Properties

Modulus of rupture (4-point), psi	1800
Length shrinkage (mold-to-fired), %	0.9
Chord shrinkage (mold-to-fired), %	1.0
Thermal expansion coefficient (25 - 1000°C), ppm/°C	2.0
Bulk density, g/cc	1.9
Apparent density, g/cc	2.6
Porosity, %	28
Absorption, %	15
Cristobalite content (after fire), %	8
Cristobalite content (after 30 min. at 1530°C), %	39
Leachability (30% boiling KOH, 30 g sample, 30 min.), %	100

Core – Metal Reaction Compatibility

Most nickel based, DS and SX alloys.

Please note that all values quoted are based on test pieces and may vary according to component design. These values are not guaranteed in anyway whatsoever and should only be treated as indicative and for guidance only. Aug.12.2015