



Henson Ceramics Limited

Unit 2, Brindley Close, Tollgate Industrial Estate, Stafford, Staffordshire, ST16 3SU

HCL1000 SERIES - ALUMINA - DATA SHEET

PROPERTIES		UNIT	TEMPERATURE	HCL1081 (C 786)	HCL1082 (C 786)	HCL1085 (C 795)	HCL1091 (C 799)	HCL1091 FC
Mechanical	Composition	Al ₂ O ₃ %	-	94.5	94.5	97.5	99.7	99.7
	Colour	-	20 °C	White	White	White	Cream	Cream
	Open Porosity	vol %	-	Nil	Nil	Nil	Nil	>5
	Grain Size	10 ⁻⁶ m	20 °C	10 - 20	3 - 8	8 - 15	3 - 10	3 - 10
	Density	g cm ⁻³	20 °C	3.6	3.6	3.8	3.9	3.7
	Cross Breaking Strength	MPa	20 °C	>300	>300	>300	>310	>150
	Compressive Strength	MPa	20 °C	2000	2000	2000	2200	800
	Youngs Modulus	GPa	20 °C	312	312	320	350	250
	Hardness	Rockwell 45N	20 °C	78	78	79	81	72
Thermal	Coefficient of Linear Expansion	10 ⁻⁶ °C ⁻¹	20 - 600 °C	7.5	7.5	7.9	-	-
		10 ⁻⁶ °C ⁻¹	20 - 1000 °C	7.7	7.7	8.1	-	-
		10 ⁻⁶ °C ⁻¹	20 - 200 °C	-	-	-	7.1	7.1
		10 ⁻⁶ °C ⁻¹	20 - 800 °C	-	-	-	8.2	8.2
	Thermal Conductivity	Wm ⁻¹ K ⁻¹	20 °C	>14	>14	>18	>25	>12
	Loaded Deformation Temperature	°C	-	1420	1450	1450	1500	1500
Electrical	Thermal Shock Resistance	ΔT(°C)	-	200	200	200	200	200
	Instantaneous Dielectric Strength (0.5mm)	MVm ⁻¹	20 °C	28	28	30	31	-
	Volume Resistivity	Ωm	20 °C	3 x 10 ¹⁷	>10 ¹⁷	>10 ¹⁷	>10 ¹⁷	>10 ¹⁷
	Permittivity							
		(10MHz)	20 °C	9.2	9.2	9.5	9.6	-
		(1GHz)	20 °C	8.5	8.5	9.1	9.6	-
		(10GHz)	20 °C	9.0	9.0	9.1	9.7	-
	Power Factor							
		(10MHz)	20 °C	<1 x 10 ⁻⁴	<1 x 10 ⁻⁴	<1 x 10 ⁻⁴	-	-
		(1GHz)	20 °C	<1 x 10 ⁻⁴	<1 x 10 ⁻⁴	<1 x 10 ⁻⁴	-	-
	(10GHz)		20 °C	<2 x 10 ⁻⁴	<2 x 10 ⁻⁴	<3 x 10 ⁻⁴	<2 x 10 ⁻⁴	-