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*for a sustainable future*

## OCCASION

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**CERAM**  
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## TEST REPORT

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**ELECTROPORCELAINS DIVISION**  
**P.B. NO. 1245**  
**BANGALORE-560 012**  
**INDIA**  
**FAO : AP GOSWAMI**

### REPORT OF TESTS ON ALUMINA POWDER


Your Reference      **SAMPLE NO.5**  
Ceram Sample(s)    **950002026**

Date Reported      **14-Sep-95**      Order/Job No      **NONE**  
Date Received      **31-Jan-95**      Date(s) of Test(s)    **01-13-Sep-95**

### MICROSCOPIC EXAMINATION REPORT

An alumina bar marked sample No.5 was submitted for microstructural evaluation. The sample consisted of a dense alumina and glass on a pore free basis gave 72% and 28% respectively. Overall porosity was measured as 17%. The size distribution of alumina grains within the sample gave the following percentage proportions.

Alumina Grain Size	Proportion %
2 $\mu$ m	15
4 $\mu$ m	35
6 $\mu$ m	42
8 $\mu$ m	6
10 $\mu$ m	1
12 $\mu$ m	0
14 $\mu$ m	1

  
**Dr RN White**  
Authorised Signatory

Ceram Research Limited

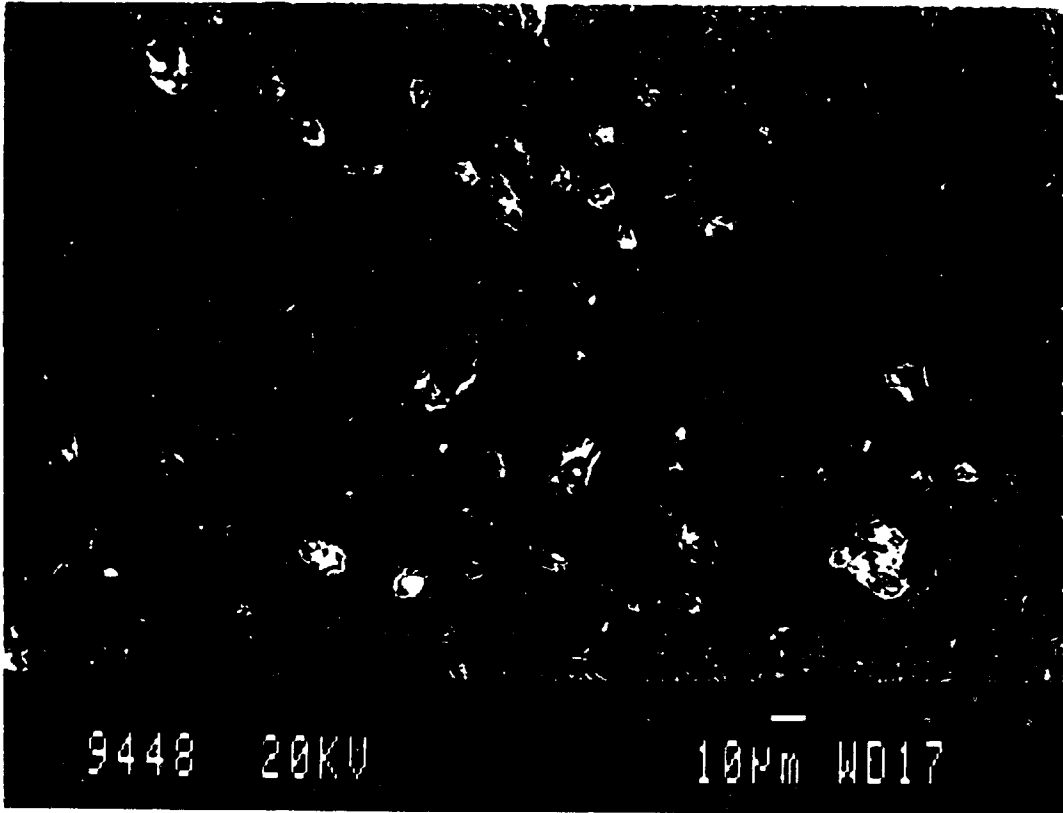
Ceram Sample(s) 950002026  
Your Reference SAMPLE NO.5

The comparison of the glass in the sample was determined by energy dispersive analysis, results of which are tabulated below. Due to the fine grained nature of the glass, it is anticipated that the analysis include some of the alumina.

Wt% Oxide	Glass Area 1	Glass Area 2	Glass Area 3	Glass Area 4
Na <sub>2</sub> O	0.78	0.90	0.90	0.62
MgO	1.9	2.1	2.4	1.7
Al <sub>2</sub> O <sub>3</sub>	65.1	58.2	57.8	66.8
SiO <sub>2</sub>	25.8	31.7	31.5	25.1
K <sub>2</sub> O	0.29	0.30	0.31	0.22
CaO	5.2	5.8	6.0	4.5
TiO <sub>2</sub>	0.59	0.69	0.67	0.62
Fe <sub>2</sub> O <sub>3</sub>	0.25	0.29	0.37	0.33

  
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95/2026

Alumina Bar 5

NEG: 9448  
MAG: x500

Dr. R. N. White



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## TEST REPORT

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AUSTRIA  
FAO : MR M KOHNER

REPORT OF TESTS ON 90% DENSE SINTERED ALUMINA BARS

Your Reference      SAMPLE NO.5 CODE: 132B  
Ceram Sample(s)    950006128

Date Reported      14-Sep-95      Order/Job No      15-3-2136P/PROJECT  
DP/IND/88/0  
Date Received      30-Mar-95      Date(s) of Test(s)    01-13-Sep-95

### MICROSCOPIC EXAMINATION REPORT

An alumina bar marked sample 5 code 132B was submitted for microstructural evaluation. The sample comprised of a dense alumina and glass body. Volume proportions of alumina and glass on a pore free basis gave 78% alumina and 22% glass. Overall porosity was measured at 15%. The size distribution of the alumina grains within the sample gave the following percentage proportions.

Alumina Grain Size	Proportion %
2 $\mu$ m	18
4 $\mu$ m	43
6 $\mu$ m	31
8 $\mu$ m	5
10 $\mu$ m	2
12 $\mu$ m	1

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Dr RN White  
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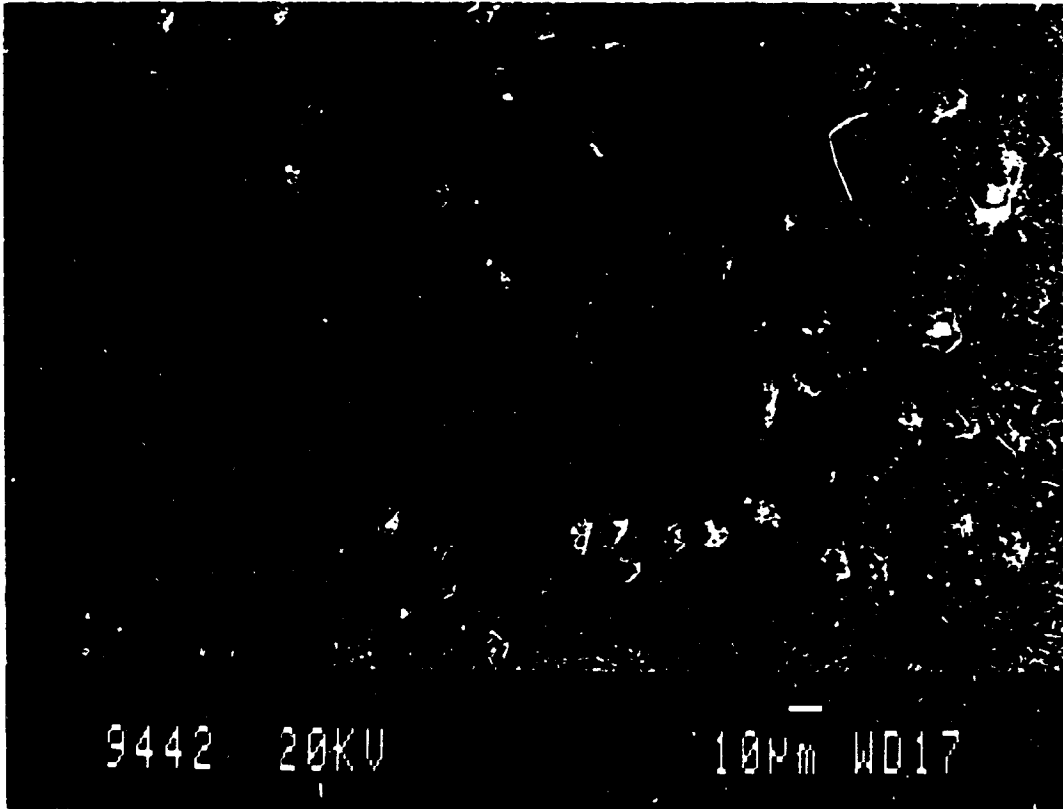
Ceram Sample(s) 950006128  
Your Reference SAMPLE NO.5 CODE: 132B

The composition of the glass in the sample was determined by energy dispersive analysis, results of which are tabulated below.

Wt% Oxide	Glass Area 1	Glass Area 2	Glass Area 3	Glass Area 4
Na <sub>2</sub> O	1.4	1.3	1.3	1.2
MgO	1.9	2.3	1.6	1.5
Al <sub>2</sub> O <sub>3</sub>	52.0	55.9	51.5	58.6
SiO <sub>2</sub>	35.6	32.9	36.3	31.4
K <sub>2</sub> O	0.47	0.48	0.53	0.44
CaO	7.5	6.2	7.7	6.0
TiO <sub>2</sub>	0.85	0.63	0.80	0.62
Fe <sub>2</sub> O <sub>3</sub>	0.25	0.27	0.32	0.26

  
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95/6128

Alumina Bar 5 132B

NEG: 9442  
MAG: x500

Dr. R. N. White