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BRITISH CHEMICAL STANDARD CERTIFIED REFERENCE MATERIAL

CERTIFICATE OF ANALYSIS BCS-CRM No. 388 ZIRCON

Prepared under rigorous laboratory conditions and, AFTER CERTIFICATION ANALYSIS BY ANALYSTS IN GREAT BRITAIN, issued by the Bureau of Analysed Samples Ltd.

The material for this CRM was supplied by Associated Lead Manufacturers Ltd. (Zircon Division), Newcastle. It was graded to pass a 75µm. (200 mesh) sieve and the sieved material was passed through a magnetic separator.

CO-OPERATING ANALYSTS AND FIRMS

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ANALYSES

Mean values - mass content in %. All results relate to the dried (110°C) sample

Analyst No.	SiO ₂	TiO ₂	Fe ₂ O ₃	Al ₂ O ₃	ZrO ₂ *	P ₂ O ₅	HfO ₂	Y ₂ O ₃	U ₃ O ₈	ThO ₂	CaO	MgO	Na ₂ O	K ₂ O	Loss on Ignition
1	32.6	0.227	0.053	0.282	66.1	0.120	1.31	0.139	0.037	0.016	0.04	0.04	<0.01	<0.01	0.28
2	32.6	0.231	0.049	0.302	66.2	0.127	0.02	0.03	0.15
3	1.17	0.144	0.031	0.019
4	1.16	...	0.035	0.019
5	32.6	...	0.052	...	66.1	0.108	0.03	0.02	0.01	0.01	0.19
6	32.7	0.237	0.044	0.289	66.2	0.115	1.39	0.121	0.028	0.020	0.03	<0.01	0.02	<0.01	0.16
7	32.8	66.2	0.01	0.01	0.18
8	32.7	0.228	0.050	0.286	66.3	0.13-	1.32	0.141	0.04	<0.01	0.02	<0.01	0.22
9	0.117
10	0.134
11	...	0.238	0.046	0.298	1.34	0.135	0.037	0.019
M _M	32.7	0.232	0.049	0.291	66.2	0.12-	1.30	0.136	0.034	0.018
s _M	0.1	0.005	0.004	0.008	0.1	0.01-	0.08	0.009	0.004	0.002

* Includes HfO₂ (ZrO₂ = 64.9% by difference)

M_M: Mean of the intralaboratory means. s_M: Standard deviation of the intralaboratory means.

The above figures are those which each Analyst has decided upon after careful verification.

Figures in bold type certified, figures in small italic type only approximate.

The following additional information was supplied by Analysts Nos. 3 and 4:-

La 0.003%, Ce 0.008%, Nd 0.004%, Sm 0.001%, Eu 0.0004%, Yb 0.03%, Lu 0.005%.

(P.T.O)

NOTES ON METHODS USED

Analysts No. 8 also found 32.6% by X-ray fluorescence spectrometry.

Analyst No. 6 also determined titania by atomic absorption spectrometry and obtained a mean value of 0.238%.

Analyst No. 6 also determined alumina by atomic absorption spectrometry and obtained a mean value of 0.298%.

All analysts determined alkalis by Flame Atomic Emission Spectrometry.

Loss on ignition was determined by heating at 1000°C.

ICP-MS: Inductively Coupled Plasma-Mass Spectrometry

P.D. RIDSDALE,
Chairman.

Preliminary Edition	July, 1973
Main Edition	September, 1975
Main Edition, incorporating values for P_2O_5	August, 1981
Main Edition with certified values for HfO_2 , Y_2O_3 , U_3O_8 , ThO_2 and revised values for Fe_2O_3	October, 1992
Main Edition with revised values for TiO_2 and Al_2O_3	July, 1993