

S4 EXPLORER

ANALYSIS OF TRACE ELEMENTS IN COPPER

Introduction

This lab report will describe the procedures and results of a calibration of trace elements in copper.

Samples

Various sets of certified reference materials were used to cover the element range given in table 1.

Calibration

Elements, concentration ranges and standard deviations of the calibration as well as sensitivities and lower limits of detection are given in table 1.

Results

Table 1 shows that the S4 EXPLORER is able to analyse trace elements in copper down to the low ppm range.



Table 1: Calibration data, Sensitivities and Lower Limits of Detection

Element	Line	Concentration Range ppm	Calibration Std Dev ppm	Sensitivity kcps / %	LLD 100 s, 3 σ ppm
Al	K α_1	0 - 1900	(50)	9	6
Si	K α_1	0 - 3000	(20)	6	6
P	K α_1	0 - 500	5	9	5
Cr	K α_1	0 - 200	2	46	3
Mn	K α_1	0 - 400	6	81	2
Fe	K α_1	0 - 2800	10	128	2
Co	K α_1	0 - 500	5	115	2
Ni	K α_1	0 - 2300	8	89	3
Zn	K α_1	0 - 2300	8	25	6
As	K β_1	0 - 400	11	5	19
Se	K α_1	0 - 160	4	47	3
Ag	K α_1	0 - 500	3	2	9
Cd	K α_1	0 - 150	3	2	9
Sn	K α_1	0 - 1800	8	10	10
Sb	K α_1	0 - 150	4	8	13
Te	K α_1	0 - 200	5	6	18
Pb	L β_1	0 - 250	3	16	7
Bi	L α_1	0 - 50	4	11	8

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