

VA Application Note No. V- 12

Title:	Zinc, cadmium, lead, copper, iron, nickel and cobalt in elementary sulphur
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Summary:	Determination of Zn, Cd, Pb, Cu, Fe, Ni and Co in elementary sulphur after digestion
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Sample:	Sulphur in the solid state
Sample Preparation:	The sulphur is dissolved in CS ₂ and is then extracted with HCl 10%. The extracts are collected, carefully evaporated to dryness, and then calcinated at 500°C.

Zinc, cadmium and lead:

Electrolyte:	KCl/NaCH ₃ COOH buffer
AE:	Pt
RE:	Ag/AgCl/KCl 3M
Parameters:	DPASV (+50 mV), HMDE U _{meas} = -1150 mV (90s), U _{start} = -1150 mV, U _{end} = -150 mV Ep (Zn) = -960 mV, Ep (Cd) = -580 mV Ep (Pb) = -375 mV

Iron and copper:

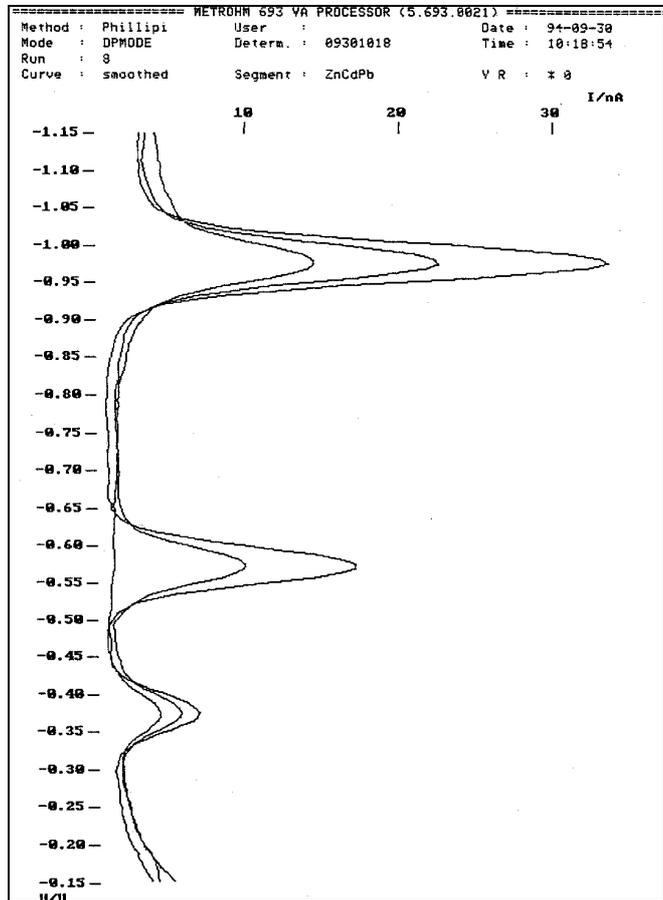
Electrolyte:	Catechol and Pipes buffer. pH = 7.0 ± 0.1 by addition of NH ₃ or HCl, resp.
AE:	Pt
RE:	Ag/AgCl/KCl 3M
Parameters:	DPCSV (-50 mV), HMDE U _{meas} = -50 mV (60s), U _{start} = -50 mV, U _{end} = -600 mV Ep (Fe) = -350 mV, Ep (Cu) = -190 mV

Nickel and cobalt:

Electrolyte:	Dimethylglyoxime and NH ₄ Cl buffer
AE:	Pt
RE:	Ag/AgCl/KCl 3M
Parameters:	DPCSV (-50 mV), HMDE U _{meas} = -700 mV (30s), U _{start} = -700 mV, U _{end} = -1200 mV Ep (Ni) = -985 mV, Ep (Co) = -1110 mV

Results:	Zn ng/g	Cd ng/g	Pb ng/g	Cu µg/g	Fe µg/g	Ni µg/g	Co ng/g
	956.5	1.22	393.5	18.8	156.9	374	< 1

Determination of zinc, cadmium and lead



Determination of iron and copper Determination of cobalt and nickel

