



ZA3000

Analysis of Cd in Kampo Medicine (Kakkontou) (Flame Method)

INTRODUCTION: The heavy metals standards specifying the analysis of heavy metals, calculated as lead, are established for individual crude drugs listed in the Japanese Pharmacopoeia. Cadmium, an element harmful to a human body, in kampo medicines prepared by combining crude drugs is also individually analyzed during the quality control processes, etc.

The ZA3000 series instruments employ the polarized zeeman correction method for the background corrections even in the flame method. As good baseline stability is provided, cadmium at a level of about 0.01 mg/L can be sufficiently analyzed. By optimizing the flame conditions, a good addition recovery can be obtained.

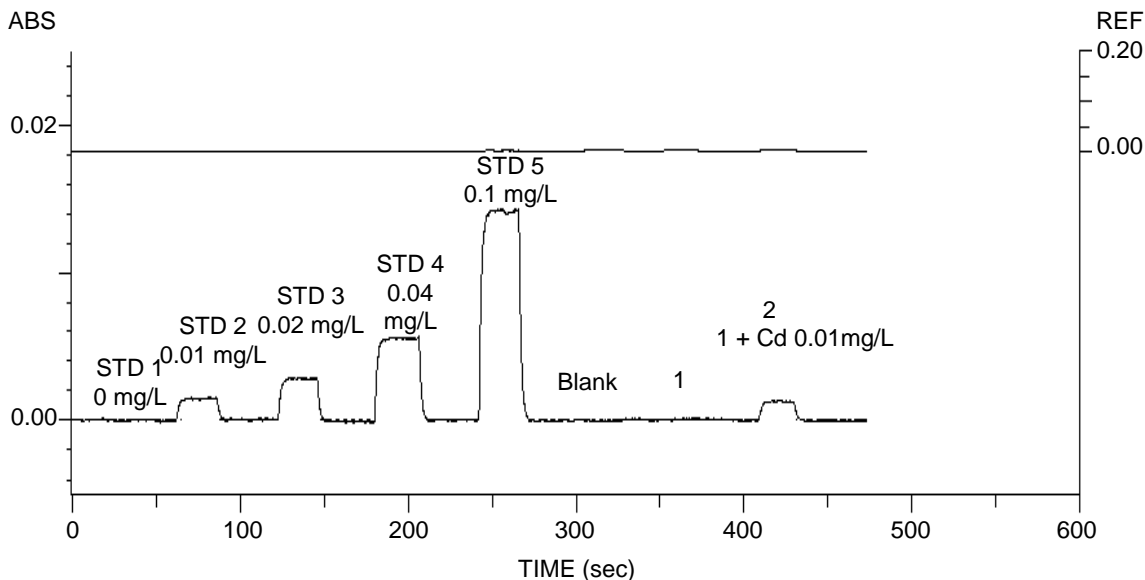
ANALYTICAL CONDITIONS		MEASUREMENT PARAMETERS
Element : Cd	Atomizer : STD Burner	Meas. Mode : Working Curve
Instrument : ZA3000	Flame : Air-C ₂ H ₂	Signal Mode : BKG Corrected
Atomization : Flame	Fuel (C ₂ H ₂) : 2.3 L/min	Curve Order : Linear
Wavelength : 228.8 nm	Oxidant (Air) : 160 kPa	Calculation : Integration
Lamp Current : 7.5 mA	15.0 L/min	Time Constant : 1.0 sec
Slit Width : 1.3 nm	Burner Height : 10.0 mm	Calculation Time: 5.0 sec
		Delay Time : 5 sec

NOTE : [Preparation] 7 mL of nitric acid and 1 mL of hydrogen peroxide solution were added to 0.5 g of the sample and the mixture was heated for dissolution by a microwave digester.

After cooling, the volume was diluted to 20 mL with purified water.

Sample 1: Kakkontou solution, Sample 2: Sample 1 + Cd 0.01 mg/L addition, Addition recovery rate: 95%

	CONC (mg/L)	Mean ABS	SD	RSD	REF	ABS
STD 1	0.0000	0.00001	0.00001	00.00 %	-0.00006	
STD 2	0.0100	0.00146	0.00004	2.74 %	0.00011	
STD 3	0.0200	0.00279	0.00001	0.36 %	0.00052	
STD 4	0.0400	0.00550	0.00001	0.18 %	0.00113	
STD 5	0.1000	0.01418	0.00012	0.85 %	0.00243	
Blank	ND	-0.00001	0.00001	- %	0.00440	
1	ND	0.00003	0.00000	0.00 %	0.00427	
2	0.0095	0.00132	0.00001	0.76 %	0.00464	



KEY WORDS

Bio/Medical Science/Food/Pharmaceutical, Medicine/Pharmaceutical, Medical Science/Pharmaceutical Science, Medicine, Kampo Medicine, Kakkontou, Cadmium, Cd, Flame, AA, ZA3000

Atomic Absorption Photometer (AA)

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