



## Analysis of Sb in River Water (Electrothermal Method)

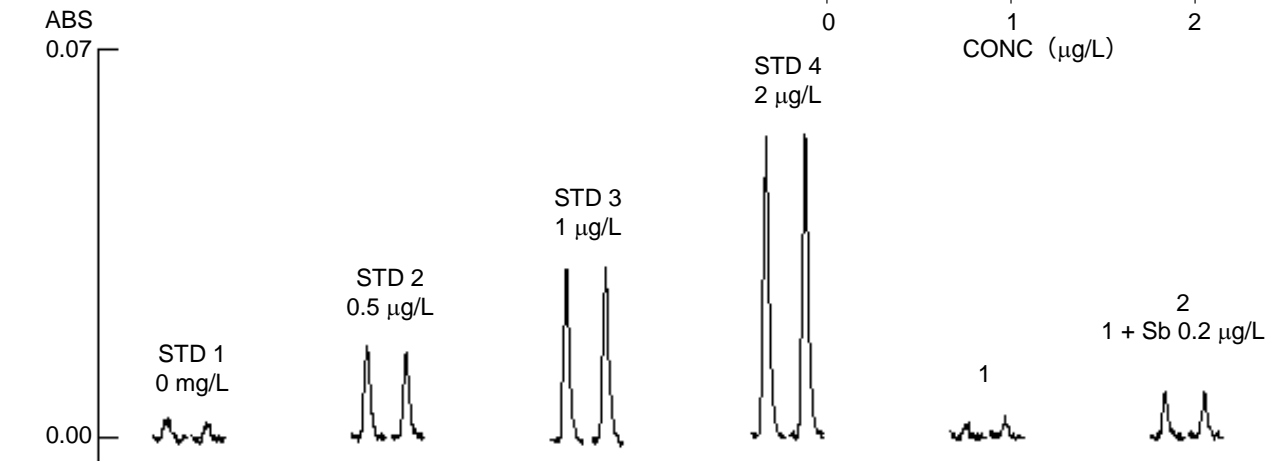
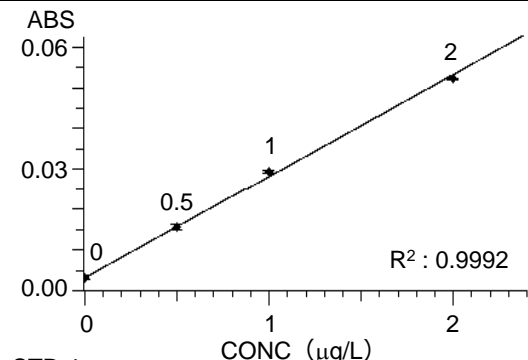
**ZA3000**

**INTRODUCTION :** By using the twin injection function, newly installed to the ZA3000 series, antimony in river water was analyzed. By using the specially designed twin cuvette (Pyro D HR), a sample is injected into two different injection ports. As a result, the analysis can be performed without extending the drying time even when a large sample volume is injected. By a conventional instrument, it was difficult to detect 0.2 µg/L of antimony, 1/10 of the water quality standard concentration, without in-furnace concentration or other preparations. With the twin injection function, the detection without the concentration is possible, resulting in the improved measurement throughput.

INSTRUMENT CONDITIONS	MEASUREMENT PARAMETERS	GA AUTOSAMPLER
Element : Sb	Meas. Mode : Working Curve	Sample Volume : 70 µL
Instrument : ZA3000	Signal Mode : BKG Corrected	Addition : Speed : 4
Atomization : GA	Curve Order : Linear	<b>MATRIX MODIFIER</b>
Wavelength : 217.6 nm	Calculation : Peak Height	Matrix Modifier : 1000 mg/L Pd+Mg
Lamp Current : 10.0 mA	Time Constant : 0.1 sec	Volume : 10 µL Order : After
Slit Width : 0.4 nm	Temp. Control : ON	
Cuvette : Pyro D HR		

TEMPERATURE PROGRAM					NOTE
Stage	Initial/Final Temperature (°C)	Heating/Keeping (sec)	Gas Flow Rate (mL/min)	Gas	
1 Drying	50 / 110	40 / 0	200	Normal	Pyro D HR, the cuvette specially designed for twin injection, was used for the analysis. The sample was prepared by adding antimony to JSAC 0301 River Water Certified Reference Material to make a concentration of 0.2 µg/L.
	110 / 300	20 / 0	200	Normal	
2 Incineration	800 / 800	20 / 0	200	Normal	
3 Atomization	2300 / 2300	0 / 2	0	Normal	
4 Cleaning	2800 / 2800	0 / 4	200	Normal	

	CONC (µg/L)	Mean ABS	SD	RSD	REF	ABS
STD 1	0.000	0.0032	0.0005	15.63 %	0.2579	0.06
STD 2	0.500	0.0156	0.0008	5.13 %	0.2785	
STD 3	1.000	0.0294	0.0002	0.68 %	0.2815	
STD 4	2.000	0.0522	0.0002	0.38 %	0.2874	
1	ND	0.0034	0.0006	17.65 %	0.3406	
2	0.197	0.0082	0.0001	1.22 %	0.3463	



**KEY WORDS**

Environmental Analysis Related, Environmental Water, Clean Water, Environmental Chemistry, River Water, Antimony, Sb, Flameless, Graphite Furnace, AA, ZA3000, GA, Pyro D HR, Environment

Atomic Absorption Photometer  
(AA)

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