

# SPECTROPHOTOMETRIC ANALYSIS 206

## Spectral Interference Correction by SR Method Using the AA-660

Interference in atomic absorption analysis is roughly classified into spectral interference, physical interference and chemical interference. The type of spectral interference caused by a neighboring line cannot be removed by the ordinary correction method using a deuterium lamp or by standard addition method. Thus, due to the positive error from apparent absorption, precise measurement is normally not possible.

To correct such spectral interference from a neighboring line, the SR (self-reversal) method applying the self-inverting phenomenon of resonant line is appropriate. The AA-660 atomic absorption spectrophotometer incorporates

a correction function by SR method as well as the correction method by deuterium lamp, and is capable of correcting the spectral interference from a neighboring line, and also correcting the background over the entire spectrum.

For examples of the correction of spectral interference, measurements with interference of calcium with lead, and iron with zinc are shown using both the  $D_2$  and the SR methods with the AA-660.

As seen in the analytical data a smaller value is obtained by correction with the SR method than with the deuterium lamp method.

### ■ Measurement of Pb in $CaCl_2$

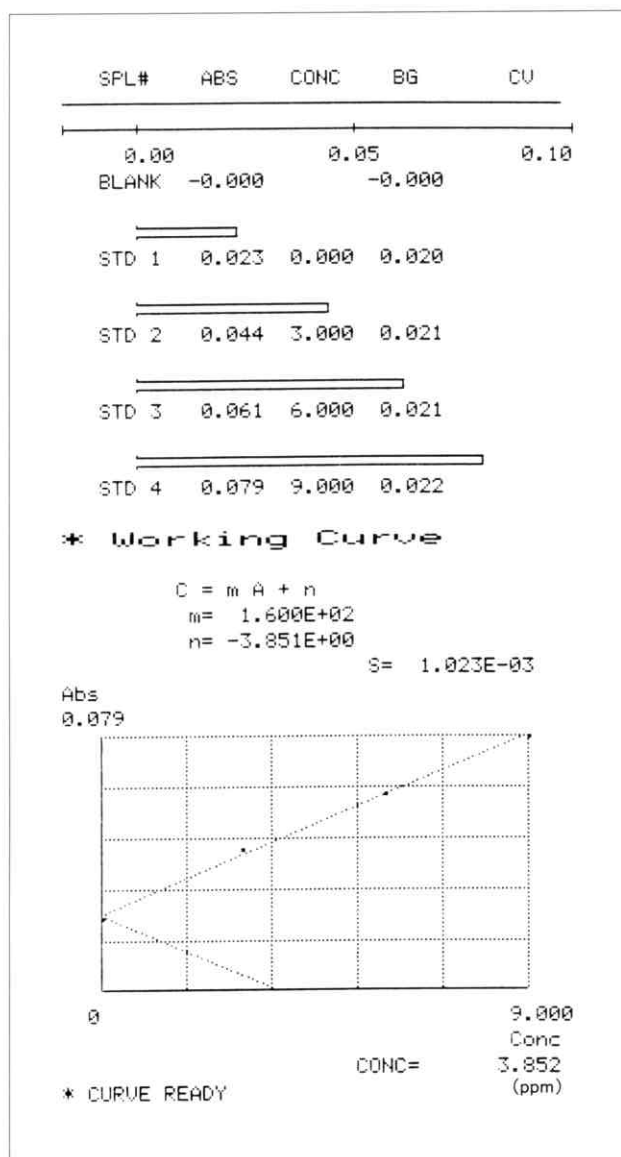


Fig. 1 Measurement for Pb Using  $D_2$  Method

### ■ Measurement of Pb in $CaCl_2$

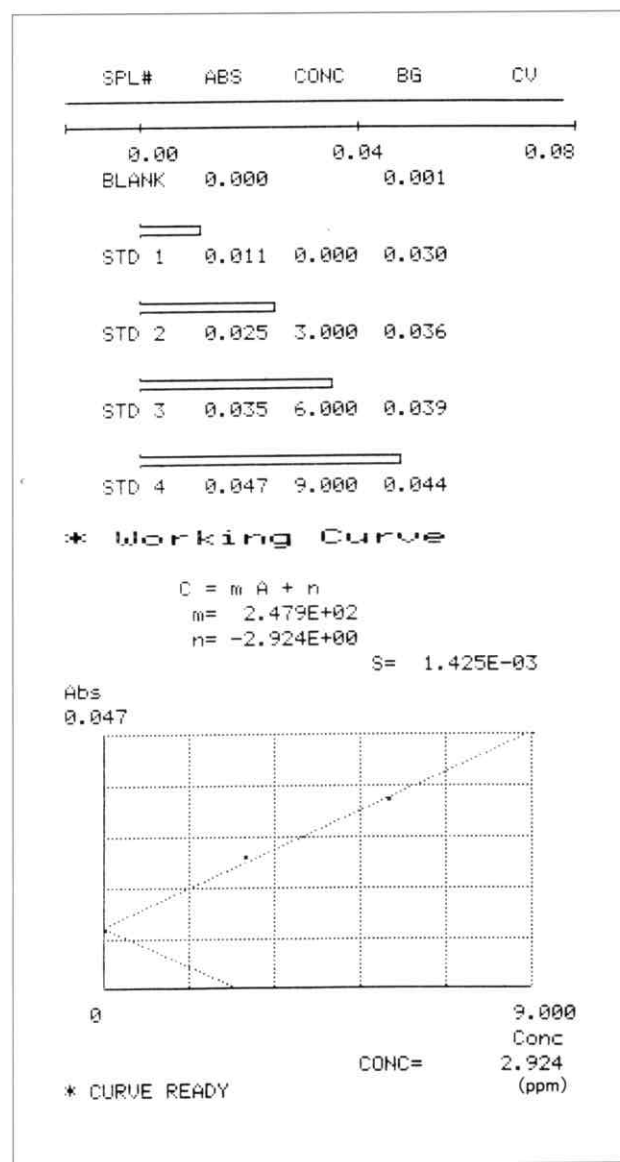


Fig. 2 Measurement for Pb Using SR Method

## ■ Instrument Conditions for Zn by D<sub>2</sub> Method

HCLamp number	1
HCLamp current	10 mA
Slit width	0.50 nm
Wavelength	213.9 nm
Measuring Mode	BGC-D <sub>2</sub>

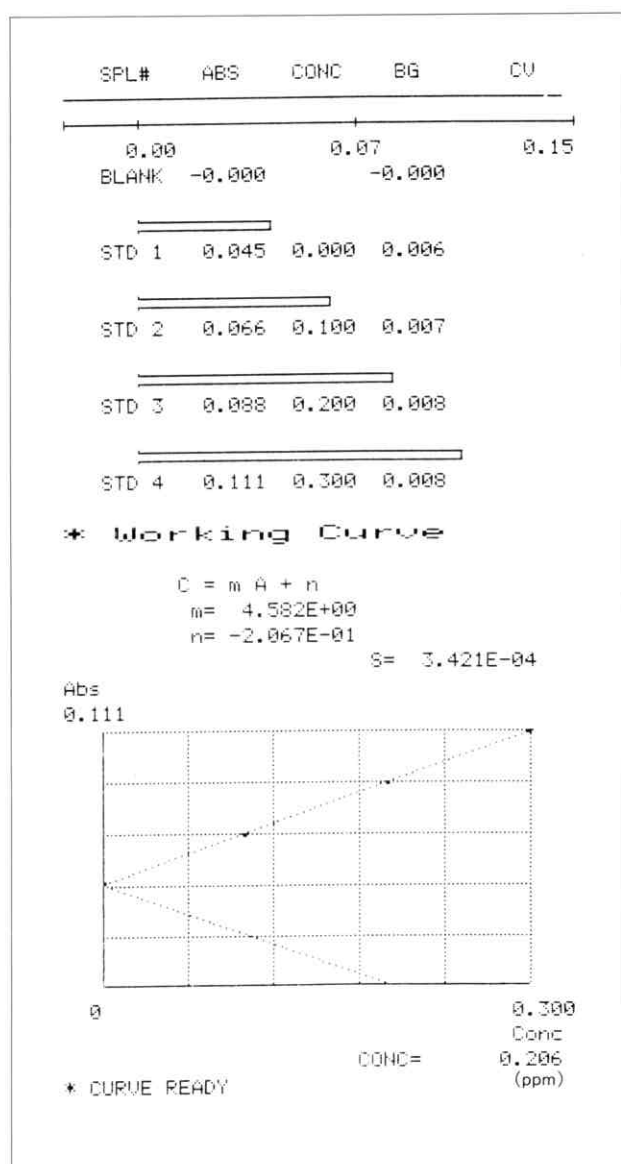
Fig. 3 Instrument Conditions for Zn

## ■ Instrument Conditions for Zn by SR Method

HCLamp number	1	
HCLamp current	High	300 mA
	Low	10 mA
Slit width	0.50 nm	
Wavelength	213.9 nm	
Measuring Mode	BGC-SR	

Fig. 5 Instrument Conditions for Zn

## ■ Measurement of Zn in FeCl<sub>2</sub>

Fig. 4 Measurement for Zn Using D<sub>2</sub> Method

## ■ Measurement of Zn in FeCl<sub>2</sub>

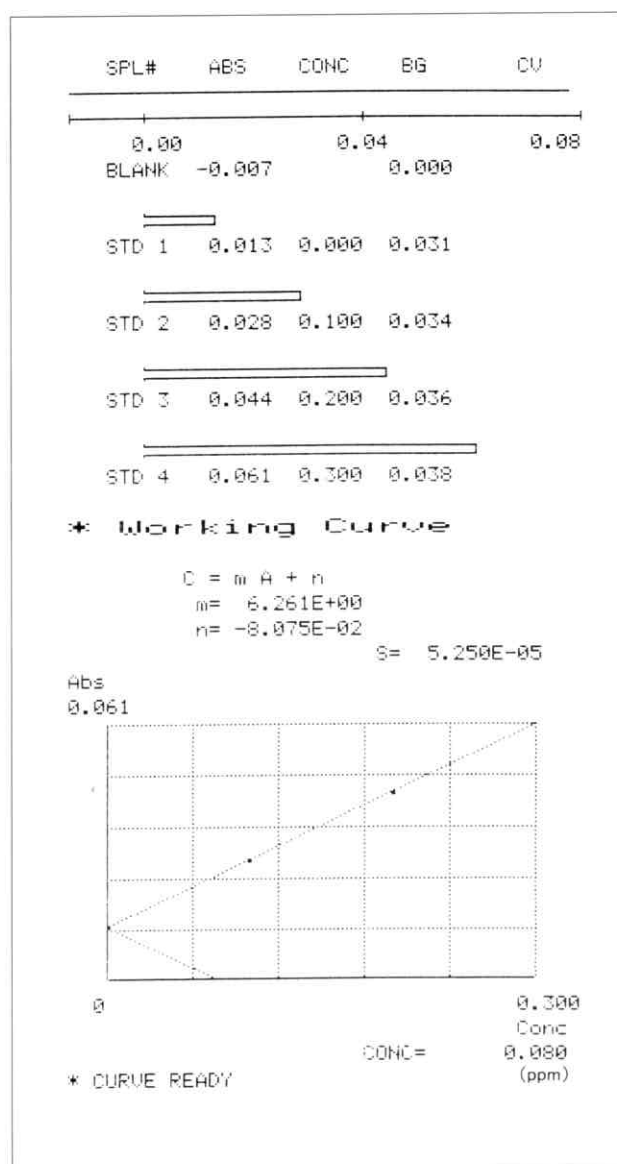


Fig. 6 Measurement for Zn Using SR Method

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