

SPECTROPHOTOMETRIC ANALYSIS 203

Measurement of Metal Elements Using the HVG-1

Environmental destruction and environmental protection are major topics in newspapers and other mass media and one of the important subjects in the future is the technology for measuring extreme traces of harmful metals promptly and precisely. The HVG-1 hydride vapor generator was developed to meet such needs.

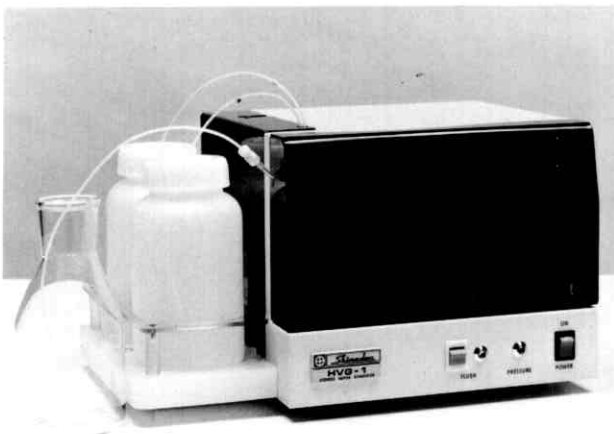
The HVG-1 is an apparatus for generating metal hydrides in vapor form by feeding and mixing the sample and reagents, that is, hydrochloric acid and borohydride, in a reaction unit. By using this apparatus, hydrides of As, Se, Hg, Sn, Sb, Te, and Bi may be produced. The generated metal hydride vapor is led into a quartz cell, heated and decomposed by simple air-acetylene flame and atomic absorption can be measured. This apparatus also features purging function so that an original carry-over due to a high concentration sample may be swiftly eliminated.

Examples of determination of As, Se and Te using the AA-680 and HVG-1 are shown below.

■ Pretreatment

For standards, each element was dissolved in 1M hydrochloric acid and introduced into the apparatus. The sample was wastewater, and in the determination of As, Se and Te, standards of As 1 ppb, Se 0.5 ppb and Te 1 ppb were added. The analytical conditions were as shown in the data.

■ Main Body of the HVG-1



■ Measurement for As

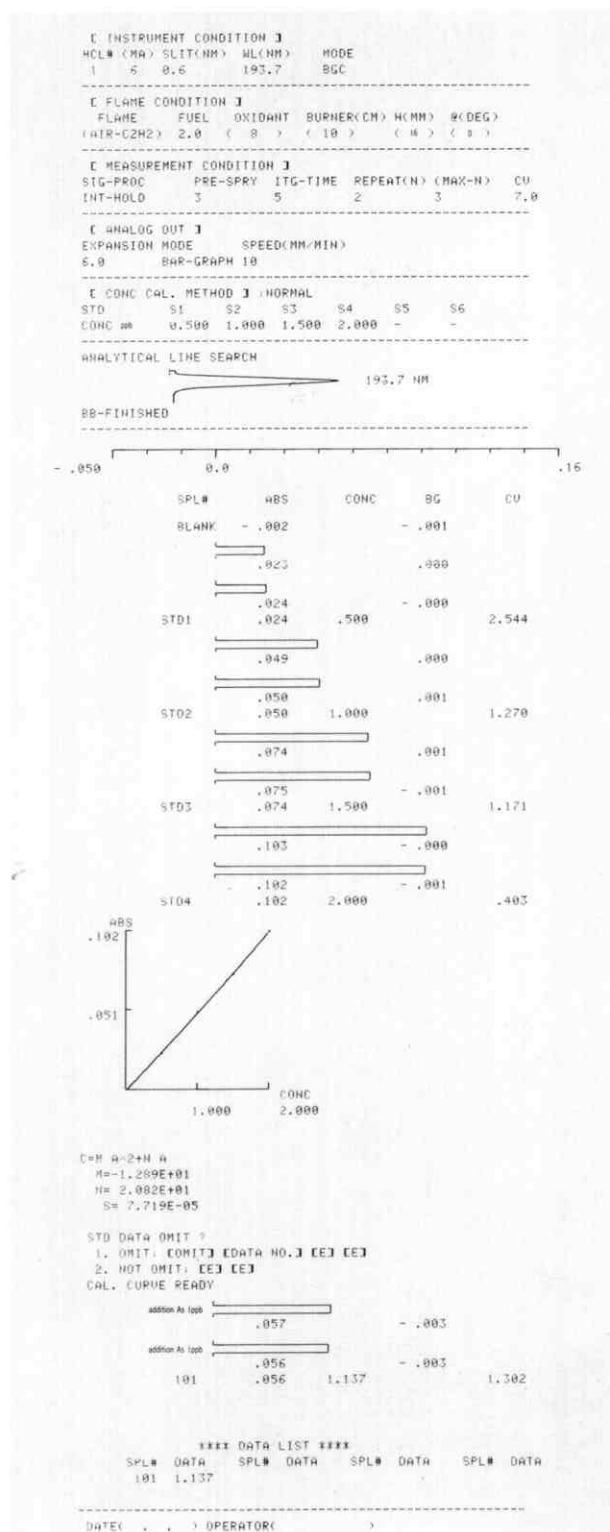


Fig. 1 Measurement for As

