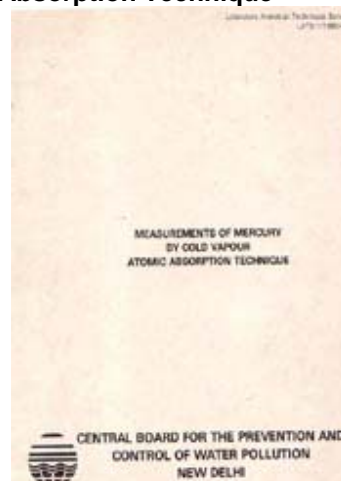


## Measurements of Mercury of Cold Vapour Atomic Absorption Technique

### Foreword

The cold vapour mercury technique is designed to improve the atomic absorbance sensitivity of mercury measurements. Mercury is unique in that the ground state atom, the species required for atomic absorption, can be generated chemically at room temperature. In this cold vapour method, mercury atoms are produced in solution by chemical reduction with stannous chloride or sodium borohydride. The volatile mercury atoms are driven out of solution by bubbling air or an inert gas (normally nitrogen gas) into the solution. The mercury vapours are then carried directly or through a drying tube (to remove moisture) into an absorption cell aligned in the optical path for the measurements of absorbance. The sensitivity of such measurements, however, depends upon the efficiency of the vapour generation system, design of the absorption cell and other factors. A comparison of two different mercury measurement systems, Mercury/Hydride (MHS-10) kit attached to Perkin-Elmer's (703) Atomic Absorption Spectrophotometer (AAS) and Mercury Analyser (MA 5800 C) of ECIL make is provided in the present report. The calibration details of the latter have also been included.



This calibration/standardization work was done by Dr. R.S. Mahwar, in close association with Dr. H.S. Matharu. Shri R.S. Shahi prepared the tracings of the figures. Shri Premankur Barua and Shri Narender Singh provided typing assistance.

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