

# A Simply Constructed and Adjustable Mercury Vapor Cell Mount<sup>1</sup>

by J. W. BALL and E. A. JENNE  
*U.S. Geological Survey  
Menlo Park, Calif.*

Glass mercury-vapor cells are frequently positioned in an atomic-absorption spectrometer by attaching them to the top of a burner with tape or elastic bands. This permits ready rotational and vertical adjustment for maximum sensitivity but has the disadvantages of requiring disassembly in order to use the burner for flame work and of handling an unprotected glass cell.

A very satisfactory and inexpensive self-contained holder for the mercury-vapor cell which protects the cell, but is readily adjustable and demountable from the burner holder and the mercury cell itself, can be made from polyethylene and flexible polyvinyl-chloride tubing (figure 1). A piece of flexible polyvinyl-chloride tubing of slightly smaller inside diameter than the outside diameter of the cell is slit lengthwise. This tubing is bonded to a 2-inch long shaft of linear polyethylene tubing (20/25 mm i.d./o.d.). The top of the polyethylene tubing is formed with a heated glass rod to approximately the same curvature as the polyvinyl tubing. While still hot and soft, the polyethylene tubing is pressed firmly against the unit composed of the polyvinyl tubing and the mercury cell, and allowed to cool. The polyethylene tubing is then pulled loose from the polyvinyl-chloride tubing and, after roughing with a file and cleaning with acetone, the two pieces of tubing are permanently joined with epoxy 220 cement (Hughes Associates, Excelsior, Minn.). The joint is heat-cured at 90°C for 30 minutes.

The device is completed by forming a notch at the base of the polyethylene shaft with a small-diameter heated glass rod, to engage the pin inside the burner-head mount unit for rotational adjustment.

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<sup>1</sup>Publication authorized by Director, U. S. Geological Survey.

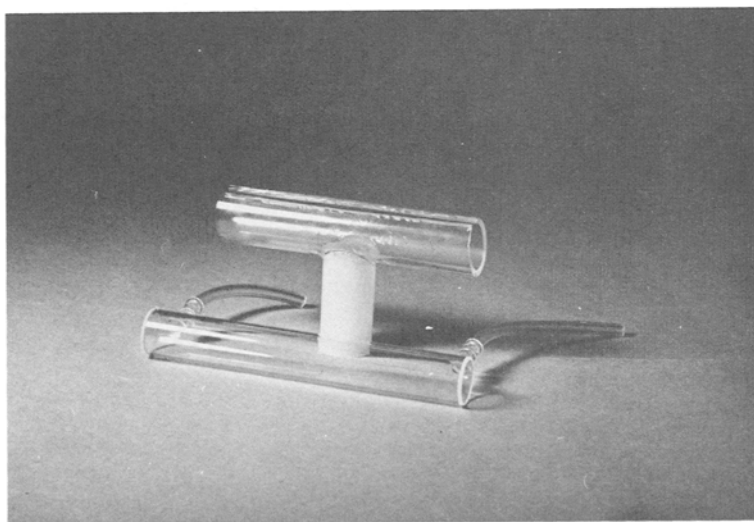
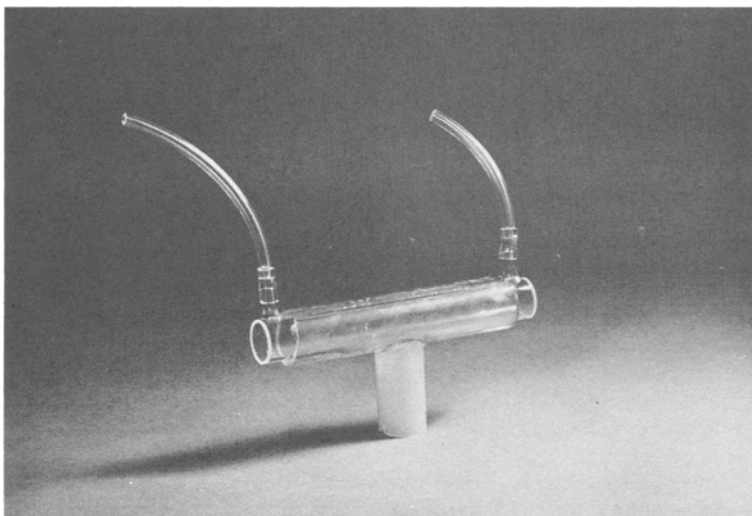


Figure 1. Mercury Cell Mount