

# WHAT DOES NIOSH CONSIDER AS ACCEPTABLE REFERENCE TECHNOLOGIES FOR PRIMARY CALIBRATORS?

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APPLICATION NOTE ITI-090

The accuracy in determining exposure to various physical and chemical substances is based on the accuracy of the air volume sampled. Therefore, sampling pumps and sampling trains must be adjusted, calibrated and routinely checked to ensure the accuracy of the flow rate.

The frequency of calibration depends on the use, care and handling to which the pump is subjected. Ordinarily, pumps should be calibrated before use in the field and after each field survey.

In the NIOSH Manual of Analytical Methods, Chapter D addresses GENERAL CONSIDERATION FOR SAMPLING AIRBORNE CONTAMINANTS. Section 7 deals with Sampling and Calibration Techniques. Part a. of Section 7 is entitled Calibration of Personal Sampling Pumps.

In this section, NIOSH recommends reference instrument technology considered acceptable to perform sampling pump calibration. They cite commercially available **primary calibrators** that include utilization of the following reference measurement technologies:

- Electronic soap bubble meters/commercially available
- Dry-cell/commercially available
- Mass-flow/commercially available
- Wet-test
- Dry-gas

For all primary calibrators used for personal sample pump adjustment and calibration, factory calibration at the point of manufacture and during subsequent factory service should be NIST traceable.

Here is a direct link to the NIOSH Manual of Analytical Methods:

<http://www.cdc.gov/niosh/nmam/chaps.html>

Use this link to look up Chapter D for detailed information regarding acceptable reference technologies for primary calibrators.





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