

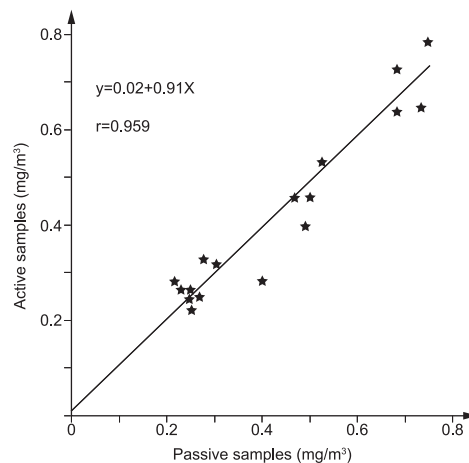


Technical Note

Sampling Formaldehyde from Formalin Using Passive Samplers

U.S. OSHA does not approve the use of any passive sampler for compliance sampling of formaldehyde from formalin **unless data is available showing good correlation between the passive sampler and active sorbent tube sampling**. In OSHA Method 1007, OSHA explains that formaldehyde will react with methanol in the formalin solution to form methoxymethanol and dimethoxymethane. Diffusive sampling rates for these two compounds differ from formaldehyde, which may produce low results with passive samplers. However, several field studies have been conducted that have indicated good correlation between passive (diffusive) samplers and reference methods utilizing pumps. This could be attributed to the many different types of formalin solutions used in the work environment; in addition, formalin solutions are diluted prior to use in some applications. Also note that the sampling rate effect was observed primarily at 86 F (30 C), which is not a common workplace temperature. In mortuaries, for example, where formalin is commonly used, the temperatures would be much lower than 86 F (30 C) and thus the effect would be minimized.

Field Investigation in Hospital Dissection Room¹ *Correlation between Passive and Active Personal Samples*



Field investigation took place in a hospital room during dissection of human organs embalmed with formalin. The formaldehyde level was 0.1 to 0.5 mg/m³ and the sampling time was 15 to 150 minutes.

References:

- ¹ Levin, J. O., Lindahl, R., and Andersson, K., "A Passive Sampler for Formaldehyde in Air Using 2,4-Dinitrophenylhydrazine-coated Glass Fiber Filters," *Environmental Science and Technology*, Vol. 20, No. 12, 1986, pp. 1273-1276
- ² Boeniger, M. and Stewart, P., "Biological Markers for Formaldehyde Exposure in Mortician Students," *Report 1, Documentation of Measurement Methodology for Characterizing Extent of Exposure*, Report No. 125.27, NIOSH, May 6, 1992

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