



Suggested Method for Determining Formaldehyde Exposure

Under OSHA's Formaldehyde Standard, any workplace where formaldehyde or formalin is used, there must be a monitoring program to ensure employees are not exposed above the recommended exposure limit (REL).

OSHA has set the following limitations:

- Action Level: Airborne concentration of 0.5ppm formaldehyde. If this level is exceeded, the employer must perform periodic air monitoring until levels can be reduced below this point (29 CFR 1910.1048(b)).
- Permissible Exposure Limit(PEL): Airborne concentration of 0.75ppm formaldehyde as an 8-hour time-weighted average (29 CFR 1910.1048(c)(1)).
- Short-Term Exposure Limit(STEL): Airborne concentration of 2ppm formaldehyde over a 15 minute time interval (29 CFR 1910.1048(c)(2)).



The preferred method of testing is with analytical equipment operated by an industrial hygienist, however, the most economical and practical way to do this as a screening tool is to use exposure badges similar to the ones shown.

A staff member who is “typical” of the exposure that the entire staff experiences should wear the badge during the testing phase. The testing should occur on a “normal workload” day during the time when exposure is expected to be the greatest. Follow the directions from the manufacturer, but in general, the badge should be worn on the collar so that it represents the “breathing zone” of the person. Even though the staff member may briefly perform duties not related to the use of formalin throughout the testing period (such as answer the telephone,) the badges should be worn by a single person for the entire time required by the test.

The badges should be labeled, sealed in the supplied transport containers and shipped to the designated lab promptly after the sampling occurs since they must be processed within 1 week of the time they are used . (The processing and instructions for shipping are included in the initial purchase price of the badges.)

If the results of the testing reveals exposure levels below the PEL, Action Level or STEL, the procedures and process are considered safe for the staff. If the levels are above the thresholds, then some changes to the equipment or procedures must be made and the testing repeated.

The manufacturer of the badges indicates that exposure to other chemicals, such as nitrous oxide, or isopropyl alcohol will not affect the accuracy of the testing.

OSHA guidelines suggest testing approximately every six to twelve months, but this is not a requirement. In our experience, if the initial testing was below the PEL, Action Level or STEL, and if the procedures are the same as when the testing was performed, it can probably be assumed that the initial results are still valid. Re-testing is a good idea when the hospital procedure changes.

Monitoring badges are available from a number of sources, including:

Grainger (www.grainger.com) (800) 323-0620

- Item # 2NNV4 - 5 badges per box Approximately \$584 (INCLUDES processing and report)
- Item # 2NNV5 - 5 badges per box Approximately \$232 (NOT including processing and report - must use an outside laboratory for processing and report)

Assay Technologies (www.assaytech.com) (800) 833-1258

- Item # W571 - 1 badge approx \$55 (INCLUDES processing and report)
- Item # X571 - 5 badges per box Approximately \$190 (INCLUDES processing and report)

Zefon International (www.zefon.com) (800) 282-0073

- Item AT-X571 - 5 badges per box Approximately \$212 (INCLUDES processing and report)