

Personal Formaldehyde Passive Sampler



- **Inexpensive**
- **Easy to use**
 - No technical training required
- **Small and lightweight**
 - Weighs less than one ounce
- **Available for 8-hour PEL or 15-minute STEL Measurements**
- **No known interferences from other substances**
- **Validation based on NIOSH Method 3500**
- **Measuring range of 0.2 to 2 ppm (8-hour TWA)**
- **Suitable for office or industrial sampling**
- **Proven performance; over 500,000 used**
- **Meets OSHA accuracy requirements**
- **Based on chromatropic acid chemistry**

Description

The Personal Formaldehyde Passive Sampler is designed to accurately measure personal exposures to formaldehyde. With accuracies of at least $\pm 25\%$, these devices can be used for OSHA compliance monitoring for either eight-hour PELs or 15-minute STELs. The measuring range of the eight-hour PEL sampler is 0.2 to 2 ppm, and the range of the STEL sampler is 0.5 to 6 ppm.

The passive sampler works on a simple yet accurate process. A permeable plastic membrane allows for controlled diffusion of air onto a chemically impregnated paper; no liquid reagents are necessary for sampling. Formaldehyde combines with the reactive media (sodium hydrogen sulfite) on the paper and forms the stable compound formaldehyde bisulfite. The sampler is then sent to an accredited laboratory for chromatropic acid analysis.

The Personal Formaldehyde Passive Sampler is available in two configurations: the PEL Sampler collects formaldehyde at a low rate suitable for full-shift (eight hours) sampling; the STEL sampler collects formaldehyde at a higher rate suitable for 15-minute sampling. The difference between the PEL and STEL models is the size of the membrane; the STEL is 2.7 times larger.

Measuring formaldehyde exposure levels could not be any easier. Simply remove the protective START sticker to expose the membrane and begin sampling. When sampling is complete, seal the sampler with the replacement STOP sticker. Start and stop times, date, and sample ID can also be indicated directly on the sampler. The sampler is small and virtually weightless.

These formaldehyde samplers have been extensively validated to ensure accuracy. There are no known interferences to the sampler. Formaldehyde may be accurately measured in the presence of other substances such as phenol, aldehydes, and aromatic hydrocarbons. The shelf life of an unopened sampler is one year.



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What Does the Risk of Formaldehyde Exposure Mean?

Formaldehyde is commonly used in pressed-wood products such as particleboard, interior-grade plywood, and fiberboard. It is also a major ingredient in urea-formaldehyde foam insulation, adhesives, dyes, inks, medicines, and embalming fluids. Formaldehyde can be released into indoor air and, over time, may accumulate to problem levels causing mild to severe health disorders in sensitive individuals.

Symptoms of formaldehyde exposure include: irritation of the eyes, ears, and throat; excessive thirst; headache; sneezing; shortness of breath; excessive phlegm; and dermatitis. Formaldehyde is an allergen and susceptible persons may become sensitized. It has also demonstrated mutagenic properties in a variety of test systems. It can react with hydrogen chloride to form bis-chloromethyl ether (BCME), a potent animal carcinogen. NIOSH recommends that formaldehyde be handled as a potential occupational carcinogen. The International Agency for Research on Cancer (IARC) has classified formaldehyde as carcinogenic. There is sufficient evidence that it causes nasopharyngeal cancer in humans.

The OSHA Action Level (AL) is 0.5 ppm (PEL) at which some action should be taken to reduce exposure to formaldehyde. Formaldehyde remonitoring must be conducted every six months if an exposure was at or above the Action Level of 0.5 ppm and every year if exposure was at or above the STEL of 2.0 ppm. Remonitoring must also be conducted if a process change occurs and/or engineering control measures are implemented that may result in new or additional exposure to formaldehyde.

Reference

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

SKC Limited Warranty and Return Policy

SKC products are subject to the SKC Limited Warranty and Return Policy, which provides SKC's sole liability and the buyer's exclusive remedy. To view the complete SKC Limited Warranty and Return Policy, go to <http://www.skcinc.com/warranty.asp>.



Performance Profile

Detection Range:	PEL 0.2 to 2 ppm STEL 0.5 to 6 ppm [†]
Exposure Time:	PEL 8 hr STEL 15 min
Precision:	PEL 6.1% STEL 6.3%
Mean Bias:	< 1%
Temperature Range:	15 to 26 C (59 to 78.8 F)
Humidity Range:	20 to 80% (at 21 to 24 C)
Minimum Air Flow Across Surface of Sampler:	20 cm/sec
Interferences:	None known
Shelf-life:	1 year

[‡] Note: SKC STEL samplers are designed to measure the formaldehyde STEL in the U.S. of 2 ppm. These samplers do not have the sensitivity required to detect the ACGIH TLV[®] Ceiling value of 0.3 ppm with a 15-minute sample.

No Technical Training Required

How to Use

1. Record the date, start time, temperature, and ID number on the badge label.
2. Clip the sampler on or near the worker's collar.
3. Peel the START sticker from the front of the badge, exposing the sample opening.
4. Allow the worker to wear the sampler for the full exposure period, 15 minutes for STEL and eight hours for PEL.
5. Remove the sampler from the worker.
6. Peel the STOP sticker from the back of the sampler and press it over the sample opening.
7. Send the sampler to an accredited laboratory for analysis using the chromatropic acid assay method.

Ordering Information

Description	Cat. No.
STEL (15-minute) Personal Formaldehyde Samplers, detection range 0.5 to 6 ppm,* pk/5	526-200**
PEL (8-hour) Personal Formaldehyde Samplers, detection range 0.2 to 2 ppm,* pk/5	526-201**

* Not suitable for detecting the ACGIH TLV Ceiling value of 0.3 ppm with a 15-minute sample

† Limited shelf-life

** Note: If sampling in an atmosphere containing formalin, see www.skcinc.com/instructions/1795.pdf, Reference 2.

Validation report available at www.skcinc.com/prod/526-201.asp.

Manufactured for SKC by Air Quality Research, Inc.