

3M Air Monitoring Guide

3500/3510, 3520/3530, 3550/3551



Instructions for Use

Important! You must read all instructions completely before proceeding with any monitoring.

General Product Description

The 3M diffusion monitor is a sampling device designed to measure average concentrations of certain contaminants over a measured time interval. It can be used for either personal or area monitoring. As a personal monitor, it is worn near the breathing zone of individuals exposed to potentially hazardous environments. When used as an area monitor, hang it away from walls, corners, table tops, or other regions where the air movement in the room may be limited.

Sampling times will vary according to contaminant concentrations and environmental conditions such as humidity. Sampling times should be selected for comparison with appropriate exposure limits. For complete details on appropriate compounds and sampling times, refer to *the Organic Vapor Sampling and Analysis Guide* or contact OH&ESD Technical Service at 1-800-243-4630, or your local 3M facility.

Store in an area free of organic vapors and/or ethylene oxide.

Shelf life is 18 months.

Good industrial hygiene practice indicates that a blank monitor be included with each set of samples to check for any contamination of the samples. The blank is a monitor which has been handled in the same manner as the sample monitors, but has not been exposed to the atmosphere in the area being monitored.

Product Information

3500 and 3510* organic vapor diffusion monitors contain a single charcoal adsorbent pad. The 3500 monitor is designed to be analyzed by the user or by an independent laboratory. The 3510 includes a prepaid analysis for up to three compounds per monitor.

3520* and 3530 organic vapor diffusion monitors contain two charcoal adsorbent pads for increased capacity. The 3520 monitor is designed to be analyzed by the user or by an independent laboratory. The 3530 includes a prepaid analysis for up to three compounds per monitor.

Please see current technical data bulletins for accuracy of the organic vapor monitors (www.3M.com/occsafety).

3550* and 3551 ethylene oxide diffusion monitors contain a single treated charcoal adsorbent pad. The 3550 includes a prepaid analysis. The 3551 monitor is designed to be analyzed by the user or by an independent laboratory. Accuracy meets current OSHA requirements for 8 hour sampling which are +/- 25% at 1.0 ppm, +/- 35% at 0.5 ppm. Also meets accuracy requirements for short-term exposure limit (STEL) sampling of +/- 35% at 5.0 ppm. The 3550/3551 must be analyzed within 4 weeks after sampling.

3M Monitor analysis services will be provided by an American Industrial Hygiene Association (AIHA) Accredited Laboratory. Confidentiality of customer analysis results will be maintained. The list of the compounds which are included in the prepaid analysis service for the 3510 and 3530 monitors is given in the table below. Up to 3 compounds may be selected from this list for analysis. A written report will be quickly returned to document the results of the analysis.

*3510, 3520 and 3550 not sold in Canada.

†Acetone (2) (c)
Acetonitrile (2) (c)
Acrylonitrile (8)
Allyl Alcohol (8)
Amyl Acetate (8)
n-Amyl Alcohol
s-Amyl Alcohol
Benzene (8)
Benzyl Chloride (8)
Bromoform (8)
1-Bromopropane (m)
n-Butyl Acetate (8)
s-Butyl Acetate (8)
t-Butyl Acetate (8)
Butyl Acrylate (8)
n-Butyl Alcohol (8)
s-Butyl Alcohol (8)
t-Butyl Alcohol (8)
Butyl Cellosolve Acetate
Butyl Cellosolve (8)
n-Butyl Glycidyl Ether (8)
p-tert Butyl Toluene (8)
Camphor (8)
Carbon Tetrachloride (8)
Cellosolve (8)
Cellosolve Acetate (8)
Chlorobenzene (8)
Chloroform (8)
o-Chlorostyrene (8)
o-Chlorotoluene (8)
Cumene (8)
Cyclohexane (6)
Cyclohexanol (8)
Cyclohexanone (8)
Cyclohexene (8)
n-Decane
Diacetone Alcohol (8)
o-Dichlorobenzene (8)
p-Dichlorobenzene (8)
trans-1,2-Dichloroethylene (6)
Diisobutyl Ketone (DIBK) (8)
p-Dioxane (8)
Dipropylene Glycol Methyl

Ether Acetate
Enflurane (8)
Epichlorohydrin (8)
Ethoxy Perfluorobutane (HFE-7200)
Ethyl Acetate (6)
Ethyl Acrylate (8)
Ethyl Benzene (8)
Ethylene Chlorohydrin (8)
Ethylene Dichloride (EDC) (8)
Ethyl Ether (4) (c)
Halothane (8)
n-Heptane (8)
n-Hexane (8)
iso-Amyl Acetate (8)
iso-Butyl Alcohol (8)
Isoflurane (Forane)
Isopar G
Isophorone (8)
Isopropyl Acetate (7)
Isopropyl Alcohol (m) (c)
Mesitylene (8)
Mesityl Oxide (8)
Methoxy Perfluorobutane (HFE-7100)
Methyl Acrylate (8)
Methyl t-Butyl Ether (MTBE) (8)
Methyl Butyl Ketone (MBK) (8)
Methyl Cellosolve (8)
Methyl Cellosolve Acetate (8)
Methylene Chloride (m) (3530 only)
Methyl Ethyl Ketone (MEK) (8)
Methyl Isobutyl Ketone (MIBK) (8)
Methyl Methacrylate (8)
Methyl Propyl Ketone (8)
Naptha (VM&P) (8)
n-Octane (8)
Perchloroethylene (8)
Phenyl Ether (8)
n-Propyl Acetate (8)
n-Propyl Alcohol (6)
Propylene Dichloride (8)
Propylene Glycol Mono Methyl Ether (8)
Propylene Glycol Mono Methyl Ether Acetate
Stoddard Solvent (8)
Styrene (8)
1,1,2,2-Tetrachloroethane (8)
Tetrahydrofuran (8)
Toluene (8)
1,1,1-Trichloroethane (Methyl Chloroform) (m)
Trichloroethylene (8)
1,1,2-Trichloro-1,2,2-trifluoroethane (1) (c)
† Vinyl Acetate (8)

Vinyl Toluene (8)
Xylene (8)
Total Hydrocarbons as n-Hexane

The number in parenthesis is the recommended sampling period in hours. This time has been estimated using the capacity of the 3510 organic vapor monitor, a relative humidity of <50% and the 1998 ACGIH TLVs. Use of the 3530 allows the sampling time to increase.

(c) Because of their high vapor pressures (low boiling points), the (c) compounds are best sampled initially with the 3520 or 3530 monitor (with back-up section). Subsequent sampling may be done with the 3500/3510 monitor if determined, by 3520 results, that contaminant concentrations are within the 3500/3510 capacity limits.

†NOTE: certain compounds (e.g. acetone, methyl ethyl ketone, vinyl acetate, etc.) may show a decreased recovery when sampled in high relative humidity. Refrigerate and/or expedite for analysis to help ensure accurate results.(m) See technical bulletin.

Sampling Instructions

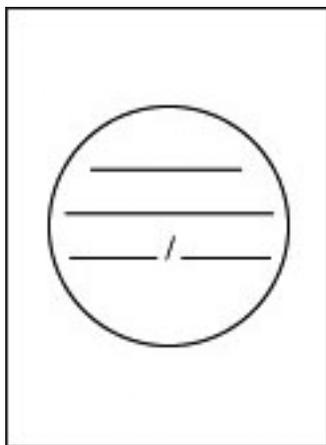


Diagram 1

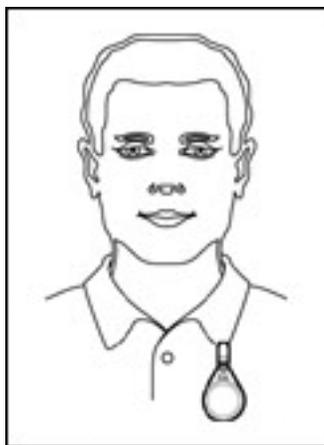


Diagram 2

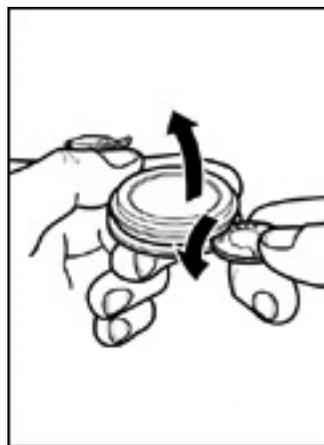


Diagram 3



Diagram 4

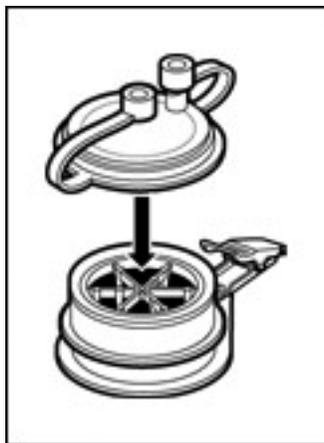


Diagram 5

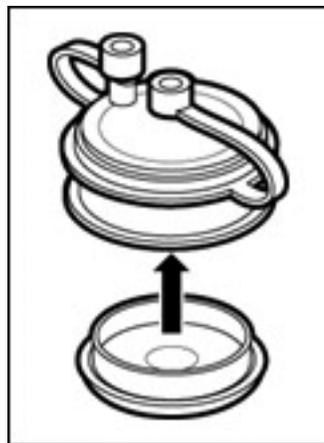


Diagram 6

1. Remove the diffusion monitor from the can.
2. Before monitoring, record the following information in your data log and on the enclosed form: 1) monitor serial number, 2) sampling date, 3) employee or area I. D., 4) temperature and relative humidity, 5) compounds to be analyzed.

3. Record the date, employee or area ID and sampling start time on the monitor label (diagram 1). **DO NOT REMOVE WHITE FILM AND PLASTIC RING.**
 4. Monitor can be used as an area or personal sampler. For personal sampler attach the monitor near employee breathing zone (diagram 2). When used as an area monitor, hang it away from walls, corners, table tops, or other regions where the air movement in the room may be limited.
 5. After sampling period is ended, remove plastic ring and white film from the monitor (diagram 3). **MOVE TO STEP 6 IMMEDIATELY.**
 6. **3500/3510 and 3550/3551:** Snap elution cap (with plugs) onto main monitor body (diagram 4). Be sure the two port plugs are secured. Record final sampling time on the back of monitor. Monitor is now ready for shipment.
3520/3530: Snap elution cap (with plugs) onto the top of the primary body (diagram 5). Separate the primary body and secondary body sections. Snap the bottom cup (no plugs) into the bottom of the primary section (diagram 6). Snap elution cap on the secondary body. Monitor is now ready for shipment.
- NOTE:** The primary and secondary sections should have the same identification numbers.
7. Return monitor and short plastic straw to can and close with plastic lid provided.
 8. The 3500, 3520 or 3551 monitors do not include prepaid analysis; therefore, **DO NOT RETURN TO 3M FOR ANALYSIS.** A list of AIHA accredited laboratories is printed annually in the American Industrial Hygiene Association Journal. A detailed analysis procedure is available from 3M. For 3510, 3530 or 3550 monitors, send monitor plus completed analysis request form to:

B.I.C. – Chemistry Department
11001 Hampshire Avenue South
Minneapolis, MN 55438

NOTE: Certain compounds (e.g. acetone, methyl ethyl ketone, vinyl acetate, etc.) may show a decreased recovery when sampled in high relative humidity. Refrigerate and/or expedite for analysis to help ensure accurate results.

FOR MORE INFORMATION

In United States, contact:

Internet: www.3M.com/occsafety

Technical Assistance: 1-800-243-4630

For other 3M products:

1-800-3M-HELPS or 1-651-737-6501

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