

3M

Air Monitoring Guide

3500/3520

FOR MORE INFORMATION

In United States, contact:

Internet: www.3M.com/occsafety

Technical Assistance: 1-800-243-4630

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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 air 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 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 –participating laboratory facility. Store in an area free of organic vapors.

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 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.

3520 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.

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

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 can be included in the analysis service for the 3500 and 3520 monitors is given in the table below.

3500/ 3520 Compound List

†Acetone (2) (c)	Ethylene Chlorohydrin (8)
Acetonitrile (2) (c)	Ethylene Dichloride (EDC) (8)
Acrylonitrile (8)	Ethyl Ether (4) (c)
Allyl Alcohol (8)	Furfural (8)
Amyl Acetate (8)	Halothane (8)
n-Amyl Alcohol	n-Heptane (8)
s-Amyl Alcohol	n-Hexane (8)
Benzene (8)	iso-Amyl Acetate (8)
Benzyl Chloride (8)	iso-Butyl Alcohol (8)
Bromoform (8)	Isoflurane (Forane)
1-Bromopropane (m)	Isopar G
n-Butyl Acetate (8)	Isophorone (8)
s-Butyl Acetate (8)	Isopropyl Acetate (7)
t-Butyl Acetate (8)	Isopropyl Alcohol (m) (c)
Butyl Acrylate (8)	Mesitylene (8)
n-Butyl Alcohol (8)	Mesityl Oxide (8)
s-Butyl Alcohol (8)	Methyl Acrylate (8)
t-Butyl Alcohol (8)	Methyl t-Butyl Ether (MTBE) (8)
Butyl Cellosolve Acetate	Methyl Butyl Ketone (MBK) (8)
Butyl Cellosolve (8)	Methyl Cellosolve (8)
Butyl Glycidyl Ether (8)	Methyl Cellosolve Acetate (8)
p-tert Butyl Toluene (8)	Methylene Chloride (m) (3520 only)
Camphor (8)	† Methyl Ethyl Ketone (MEK) (8)
Carbon Tetrachloride (8)	Methyl Isobutyl Ketone (MIBK) (8)
Cellosolve (8)	Methyl Methacrylate (8)
Cellosolve Acetate (8)	Methyl Propyl Ketone (8)
Chlorobenzene (8)	Naptha (VM&P) (8)
Chloroform (8)	n-Octane (8)
o-Chlorostyrene (8)	Perchloroethylene (8)
o-Chlorotoluene (8)	Phenyl Ether (8)
Cumene (8)	n-Propyl Acetate (8)
Cyclohexane (6)	n-Propyl Alcohol (6)
Cyclohexanol (8)	Propylene Dichloride (8)
Cyclohexanone (8)	Propylene Glycol Mono Methyl Ether (8)
Cyclohexene (8)	Propylene Glycol Mono Methyl Ether Acetate
n-Decane	Stoddard Solvent (8)
Diacetone Alcohol (8)	Styrene (8)
o-Dichlorobenzene (8)	1,1,2,2-Tetrachloroethane (8)
p-Dichlorobenzene (8)	Tetrahydrofuran (8)
trans-1,2-Dichloroethylene (6)	Toluene (8)
Diisobutyl Ketone (DIBK) (8)	1,1,1-Trichloroethane (Methyl Chloroform) (m)
p-Dioxane (8)	Trichloroethylene (8)
Dipropylene Glycol Methyl Ether Acetate	1,1,2-Trichloro-1,2,2-trifluoroethane (1) (c)
Enflurane (8)	† Vinyl Acetate (8)
Epichlorohydrin (8)	Vinyl Toluene (8)
Ethyl Acetate (6)	Xylene (8)
Ethyl Acrylate (8)	Total Hydrocarbons as n-Hexane
Ethyl Benzene (8)	

The number in parenthesis is the recommended sampling period in hours. This time has been estimated using the capacity of the 3500 organic vapor monitor, a relative humidity of <50% and the 1998 ACGIH TLVs. Use of the 3520 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 monitor (with back-up section). Subsequent sampling may be done with the 3500 monitor if determined, by 3520 results, that contaminant concentrations are within the 3500 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;

- 1) Remove the diffusion monitor from the can by removing and saving the plastic lid, and removing the metal lid using the pull ring.
- 2) Before monitoring, record the following information in your data log and on the enclosed chain of custody (COC) form:
 - a) monitor serial number,
 - b) sampling date and time,
 - c) employee or area I.D.,
 - d) temperature and relative humidity,
 - e) compounds to be analyzed.
- 3) Record the date, employee or area I.D., 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.
 - a) For personal sampler attach the monitor near employee breathing zone (**Diagram 2**).
 - b) 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, record the end time, and remove plastic ring and white film from the monitor (**Diagram 3**). **MOVE TO STEP 6 IMMEDIATELY.**

Diagram 1

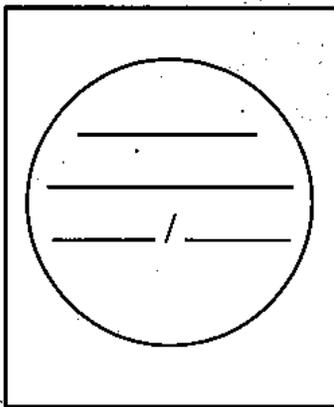


Diagram 2

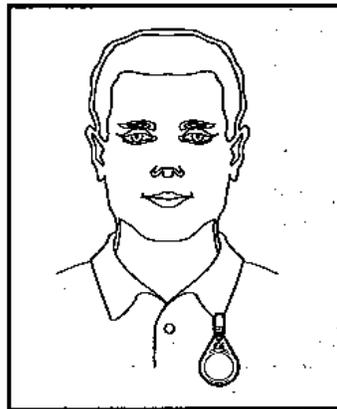
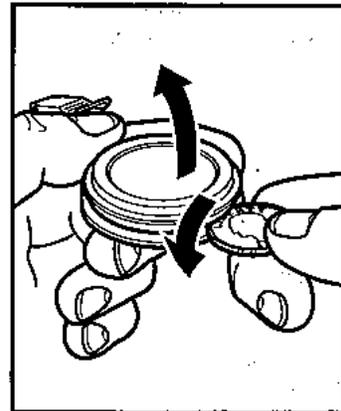


Diagram 3



- 6) **For 3500 (Single-Section):** Snap elution cap (with plugs) onto main monitor body (**Diagram 4**).
 - a) Be sure the two port plugs are secured. Record final sampling time on the back of monitor.
- 7) Monitor is now ready for shipment.
- 8) **For 3520 (Dual-Section):** Snap elution cap (with plugs) onto the top of the primary body (**Diagram 5**).

- a) Separate the primary body and secondary body sections
- b) Snap the bottom cup (flat, no plugs) into the bottom of the primary section (diagram 6).
- c) Snap elution cap on the secondary body.

Diagram 4

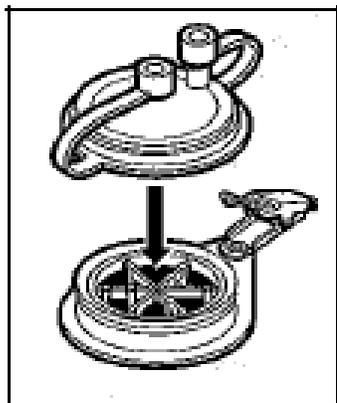


Diagram 5

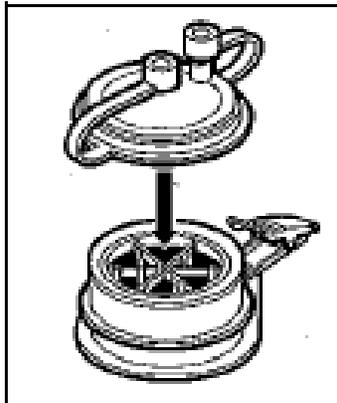
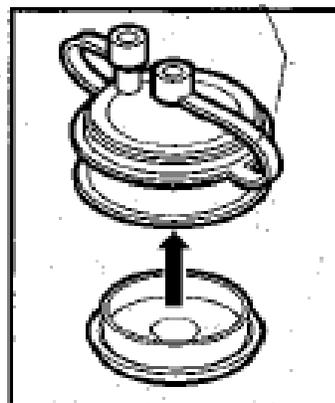


Diagram 6



Monitor is now ready for shipment

- 9) NOTE: The primary and secondary sections should have the same identification numbers.
- 10) Return monitor and short plastic straw to can, and close with plastic lid provided.

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.