

**Technical Data  
Bulletin**

OH&amp;ESD

#134, September, 1997

**3M Organic Vapor Monitors**  
**3500/3510/3520/3530****1-Bromopropane**

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<b>Background</b>	This bulletin is a partial validation for sampling <i>1-Bromopropane</i> . This is an abbreviated form of the test protocol given in Tech Data Bulletin #124.
<b>Sampling Rate</b>	The sampling rate for 1-Bromopropane is 31.7 cc/min.
<b>Analytical Recovery</b>	Recovery over a range of 1.4 to 5.4 mg using carbon disulfide was 102% with a coefficient of variation of 1.9%.
<b>Accuracy</b>	The accuracy is within $\pm 25\%$ as determined from a series of concentration and time experiments (see Table 1 on page 2).
<b>Humidity</b>	Not significant (uptake rate was linear) when monitors were exposed to 99 ppm 1-Bromopropane for 1.5, 4, 6 and 8 hour periods at 80% RH.
<b>Capacity</b>	The capacity of the 3500/3510 at 8 hours and 80% RH was 7 mg. When sampling at high humidity and concentrations greater than 100 ppm, the sampling time should be reduced or the 3520/3530 should be used.
<b>Detection Limit</b>	Assuming an analytical detection limit of 2 $\mu\text{g}$ per monitor, the minimum detectable concentration is 0.84 ppm with a 15 minute sample, and 0.03 ppm with an 8 hour sample.
<b>Reverse Diffusion</b>	Not significant (<10%) when exposed to 102 ppm 1-Bromopropane for 30 minutes, and then 450 minutes clean air at 80% RH, 23°C.
<b>Storage</b>	Samples may be stored at room temperature (23°C) or refrigerated (4°C) for 21 days without significant change from initial recovery.

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**Temperature** No specific experimental data. No significant effects (<10% bias) observed for Toluene, 1,1,1-Trichloroethane, Methylene Chloride and Hexane.

**Interferences** The sampling rate is not affected by the presence of other solvents provided that the monitor is not overloaded.

**Orientation/  
Air Velocity** To accurately sample at any orientation, there must be a minimum air velocity of 25 ft/min.

Table 1 indicates the 3500/3510 accuracy for 1-Bromopropane over a range of concentrations and times at 50% and 80% RH. According to our protocol, accuracy must be within  $\pm 25\%$ .

Table 1: 3500/3510 % Accuracies by concentration and sampling time.

Conc. (ppm)	15 min	3 hrs	8 hrs
11		14.4 % (80 % RH)	13.5 % (80 % RH)
99	15.8 % (50 % RH)		11.2 % (50 % RH)