

RECOMMENDED PROCEDURE FOR DETERMINATION OF RECOVERY COEFFICIENTS FOR 3M ORGANIC VAPOR MONITOR #3500

The 3M Company publishes the Recovery Coefficient for each organic material on the Qualification Data Sheet. This number represents the mean value ± 2 standard deviations from the tests conducted at 3M. A minimum of 5-fold replication (both monitors and standards) of the recovery test is performed at 3M. However, we encourage the user to verify the recovery coefficients, since techniques and presence of multiple contaminants can affect recovery coefficients.

The recovery coefficient is determined by vapor-state spiking of monitors. This is accompanied by the following steps:

- Remove the white barrier film from the monitor.
- Place a 2.5 cm diameter Whatman #5 filter paper on the spacer plate.
- The closure cap is then snapped on.
- Calculate the amount of material to be injected to correspond to the amount sampled by the monitor at a concentration of 1/2 TLV for 4 hours (approximately a 7.0 liter sample).

Example:

For Toluene with a TLV of 100 ppm or 375 mg/m³, the spike would have:

$$\frac{375}{2} (0.007) = 1.31 \text{ mg.}$$

- Inject the known quantity of the organic material onto the filter paper through the center port.
- The monitor is allowed to sit for **16-24** hours to allow total transfer of the organic material from the filter paper to the sorbent before elution.
- Remove filter paper from monitor.
- Proceed with elution and determination of amount recovered by G.C. analysis.

For further assistance, call 3M Occupational Health and Safety Products Technical Service toll free on 1-800-328-1300, or write 3M Company, 3M Center, Occupational Health and Safety Products Division, P.O. Box 33155, St. Paul, MN 55101.

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