

Number: 71
Product: 3M ORGANIC VAPOR MONITORS
Subject: SAMPLING FOR METHYLENE CHLORIDE

I. INTRODUCTION.

Active carbon has been shown to have a poor affinity for methylene chloride. This has resulted in strict limitations upon sampling times when using the 3M organic vapor monitors for sampling this compound.

Recent experimental data suggests that an organic vapor monitor will sample methylene chloride satisfactorily when used within the sampling time guidelines and under steady state conditions. However, when the monitor is used in nonsteady state conditions, with varying concentrations of methylene chloride in the atmosphere, it is possible to get desorption and subsequent sample loss when the ambient concentration of methylene chloride becomes zero. This sample loss could result in a sampling error, with the reported concentration less than the true ambient concentration.

II. SAMPLING RECOMMENDATIONS.

Use of the 3M Organic Vapor Monitor #3500 is not recommended for methylene chloride.

Only the #3520 Organic Vapor Monitor with back-up section should be used for sampling methylene chloride.

III. SAMPLING GUIDELINES.

Maximum Sampling Time: 4 hours

Max. Qty. of Methylene Chloride on Top Wafer: 2000 micrograms

If the quantity of methylene chloride on the back-up wafer exceeds 50% of the amount on the top wafer, the sample is invalid. If this occurs, the sampling should be repeated using a shorter sampling period.

IV. ACCURACY.

The capacity of the carbon wafers in the #3520 Organic Vapor Monitor for methylene chloride is strongly influenced by the presence of water vapor and competing organic vapors. This introduces an uncertainty into the results of analysis for methylene chloride.

The accuracy of the #3520 Organic Vapor Monitor when used to sample methylene chloride can be as low as $\pm 50\%$ if high humidity or competing organic vapors are present.

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