



FEB 6 1974

C. J. H. H.

TO R. A. Chartier AT Assonet
FROM I. A. Capuano AT New Haven
SUBJECT VINYL CHLORIDE ATMOSPHERIC MONITORING

DATE February 5, 1974
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In our meeting at Assonet on January 28, 1974, I took a commitment to recommend instrumentation for the atmospheric monitoring of vinyl chloride and to have our New Haven Library conduct a literature search on PVC decomposition products.

Regarding the analysis of vinyl chloride in air both manual and automatic systems are available. The best instrument for this job is gas chromatography using a flame ionization detector because it offers specificity and extremely high sensitivity (down to 1 ppm or less). Infrared analyzers are also capable of detecting vinyl chloride in air, however, their sensitivity would not be adequate should the TLV of vinyl chloride be lowered to 5-25 ppm in the future. Since you already have a laboratory chromatograph with the flame detector at Assonet, once the question on standard reproducibility and sampling containers is resolved, you have the capability to manually monitor the various locations of interest.

Automatic monitoring would, of course, be the ideal approach to vinyl chloride air monitoring because of the continuous analytical coverage and no man power requirement.

Although an automatic or process chromatograph with the flame detector would again be best for its analytical specificity, it is, however, expensive (\$8,000-\$10,000 per unit) and could be substituted with a conventional total hydrocarbon flame ionization detector which costs about half the price of a process chromatograph.

The total hydrocarbon monitor would be satisfactory to use if other hydrocarbon contaminants besides vinyl chloride are not present in the air at relatively high concentrations.

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I would, therefore, recommend that prior to considering automatic monitoring a survey be made of the various plant areas using the laboratory chromatograph with manual sampling.

The automatic instrumentation is commercially available and can be installed within two to three months from the time a decision has been made and a purchase order placed with us.

I recommend that my analytical section handle any automatic monitoring requirements since we could design the system to use part of the already existing hardware from the explosivity meters.

Dr. R. E. Maizell responded very promptly to my request on the literature search on P.V.C. decomposition products. Work on this is in progress and a report should be issued soon.

We will be glad to work with you to help you meet the air or any other analytical requirements you consider necessary.


I. A. Capuano

IAC:ljc

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