

3M Occupational Health and
Environmental Safety Division

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RECEIVED

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M.C. Faricy

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December 18, 1989

Milagros Diaz Parra
Supervisor de Higiene Ocupacional
Pequiven
Apartado 159
Maracaibo,
Venezuela

FAX 011-58-66-311053/100

Dear Ms Diaz,

In response to your Fax message to Doug Taylor, here are the responses.

1. The appropriate monitor for Vinyl Chloride Monomer is the 3520. Since activated carbon has limited affinity for VCM, you should not use the 3500. I also recommend that you use the ratio of the weight of VCM analyte on the front and back sections of the 3520 as an internal check on the validity of the sample. If the amount of analyte found on the second sorbent wafer exceeds 50% of the material on the front sorbent wafer, then the sample is not valid. The details of this are covered in an 3520 Sampling Guide I am sending you.

2. I am sending you technical details of the 3720 monitor, and its validation studies in comparison to bisulfite impingers in the laboratory and field studies involving the 3720.

The temperature correction coefficient for diffusional monitors comes from theoretical treatment of diffusion processes. These apply equally to formaldehyde diffusion, and the temperature correction factors found in the sampling guide for organic vapor monitors can be used. You will note that these correction factors are not very large, and are close to the value 1.0.

The 3720 Formaldehyde Monitor can be used in a wide relative humidity range. We tested the product in RH ranges from 25% to 85%. This variation in RH has shown no variation in sampling rate.

At extremely low RH's, we expect the collection efficiency of the monitor to be affected if humidifying pad of the secondary body dries out, and the monitor sorbent cannot be humidified sufficiently during monitoring to allow the reaction of formaldehyde with the bisulfite salt in the

3M 010111

sorbent waf r. I would not expect this to be of concern in Venezuela.

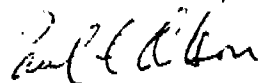
3. - Sampling Rate Validation. I am sending you a copy of the Sampling Rate validation protocol. If there are compounds you wish to monitor which do not show up in the published tables with sampling rates, please consult us. By knowing the boiling point and molecular weight of the substances, we can compute the sampling rate using the Hirshfelder Equation and communicate this to you. Although this is only a semiempirical sampling rate, it is considered accurate to within +/- 5%.

4. You will need to send the Mercury Monitor back to our Monitor Analysis service for analysis. Please send monitors to: Monitor Analysis Service
OH & ES Division
Building 76-2W-02
St Paul, MN 55107
USA

The 3600 Monitor analysis results goes back to you by 1st Class normal mail. Be sure to include your return address.

I hope this answers all your questions.

Sincerely,



Paul E Olson
International Technical Manager
3M/Occupational Health and Environmental Safety Division

cc: Doug Taylor - 220 - 3E - 04
Antonio Mata - 3M Venezuela

3M 010112