



UNION CARBIDE CORPORATION
CHEMICALS AND PLASTICS

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SOUTH CHARLESTON PLANT

Regional Administrator
Environmental Protection Agency
Region IV

Part 61 National Emission Standards for Hazardous Air Pollutants,
Appendix B, Method 106, Request to Use an Alternative Chroma-
tographic Column

Mr. Brian L. Beals of Region IV, Environmental Protection Agency
in a letter dated April 8, 1977 denied Union Carbide Corporation's
request to use a chromatographic column of 6.1 m x 3.2 mm stain-
less steel packed with 20% Tergitol E-85 on 60/80 mesh Chromosorb
W as an "alternate method" under Part 61 Appendix B Method 106,
4.3.2.

Union Carbide Corporation respectfully asks that the request be
reconsidered for the following reasons:

1. Union Carbide Corporation vinyl resin plants all use vinyl acetate as a comonomer with the resultant appearance in all plant vents and streams of small amounts of acetaldehyde. Any control system in use by Union Carbide Corporation in controlling vinyl chloride emissions to the air involves also the simultaneous measurement of acetaldehyde and similar materials. The ability to use a single analytical system for all vented materials would reduce costs and errors that would ensue if Method 106 were used for vinyl chloride and the UCC method were used for acetaldehyde determination.
2. Union Carbide Corporation is asking permission to use the subject chromatograph column as an "alternate" (§61.01(c)) not as an "equivalent" (§61.01(h)). For purposes of emission control the slightly lower relative error of the column required by EPA's Method 106 does not appear to be significant. We are not proposing that the UCC method be used as a reference method or an equivalent method. In situations where this small error appears to have significance we would certainly use the EPA specified method.

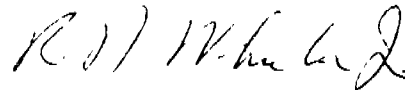
UCC 102800

Regional Administrator
Region IV

3. Union Carbide Corporation emission data history is based upon use of its method of analyses. This of course provides a continuum of results. It should be noted that the EPA Method 106 has been changed once since the standard issued and once before issue.
4. Union Carbide Corporation is continuing its developmental work on the proposed "alternate column" and believes its accuracy and precision will equal that of the EPA Method 106 column. The column temperature of 70°C required for the proposed "alternative" column was not as stable as it should have been during the original test, the data from which was presented in the equivalency request dated December 5, 1976.
5. The proposal for use of the Union Carbide Corporation chromatograph column has been acceptable to other EPA Regions.

Union Carbide Corporation would be pleased to answer any further specific questions and to provide additional data. It does not, however, view this request for approval of an "alternate procedure" as a matter of critical importance either to EPA or itself. Neither procedure is going to affect emission control significantly.

Very truly yours,



R. N. Wheeler, Jr.

RNW/bt

UCC 102801

DETERMINATION OF RESIDUAL VINYL CHLORIDE MONOMER IN VINYL RESINS,
VINYL RESIN VARNISH, LATEX, WASTE WATER AND WASH ACETONE SAMPLES

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6. Calibration

Calibration is to be performed each day using three certified gas vinyl chloride samples which will cover the chart range at the expected operating attenuation. The results obtained from these three samples shall be used to generate a calibration curve for the expected chromatograph conditions. This curve should be checked against the previous day's calibration curve to insure that the instrument is functioning normally and there is essentially no significant difference between the two curves. If there is a significant difference between the two calibrations then the instrument operation should be checked and/or corrected and a second calibrations curve run to insure that conditions are stable. Ordinarily unless the chromatograph has been shut down for repairs there should be no change in the calibration curve since the oven and carrier gas streams are always on.

While sample injection systems vary from one chromatograph to another the gas calibration samples ordinarily would be injected as described in EPA's Method 106. Where there is no gas handling system, sample injection should be done by a calibrated gas syringe.

Periodically standard solvent - vinyl chloride solutions should be prepared using weighed amounts of vinyl chloride sealed in a glass ampoule and purified tetrahydro furan. One tenth m of liquid vinyl chloride dissolved in 10 gms. of THF will yield a solution of 26 ppm VCM concentration. These liquid samples will be stable for several months if properly refrigerated. The periodic use of the standard liquid sample as well as the gas is advantageous because it provides a calibration check across the whole procedure including sample handling injection, vaporization and so forth.

UCC 102802