



INTERNAL C RRESPONDENCE

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CHEMICALS AND PLASTICS

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To (Name) Mr. B. E. Godard Date January 16, 1975
Division
Location New York Office Originating Dept. Research and Development
Copy to Dr. W. B. Ackart, 312 Subject VCM Announcement -
Mr. R. J. Hanna, 511 Italian Official Gazette
Mr. D. E. Hardman, NYO
Dr. T. T. Szabo, NYO
Mr. R. N. Wheeler

Dear Bruce:

Though my Italian comprehension is poor, nevertheless my French ability allows a reasonable translation of the announcement and test method relating to VCM which appeared in the 8/12/74 issue of the "Gazzetta Ufficiale Della Repubblica Italiana" (Official Gazette of the Italian Republic).

The announcement states that producers of PVC and vinyl chloride based copolymers must file with the Minister of Health the amount of VCM in the resins together with the tolerance, as well as the test procedure used; the method suggested is able to define the monomer extracted into a 50/50 ethanol-water mixture (extraction conducted at 44°C for 2 hours) with a level of sensitivity, based on the weight of the ethanol/water solvent, of 0.05 ppm.

The test method included states that the extraction solvent should be 10 ml in volume and that an aliquot portion of this solution is injected into the chromatograph for analysis. The calibration curve for the determination is prepared using 50/50 alcohol-water mixtures diluted to containing 0.05, 0.1, 0.2, 0.5 and 1.0 ppm of VCM.

Assuming that the lower level of reliability of the method, (.05 ppm) is observed in the analysis of the aliquot sample, the total 10 ml of the extraction solvent would contain:

$$\frac{0.05}{10^6} \times 10 \times 0.909 = 0.0045 \text{ grams of VCM}$$

(specific gravity)

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If 1.0 gram of resin were extracted by the 10 ml of aqueous ethanol, the resin would have contained 0.0045×10^6 or 4500 ppm of VCM.

For lower weights of resin, 0.05 ppm analysis would relate to ppm based on resin weight as follows:

<u>Resin Weight, g.</u>	<u>VCl, ppm</u>
0.5	2250
0.1	450
0.05	225
0.01	45

Though I may have missed it, I do not find in the method what sample size to use in the extraction.

In summation, the test method described does not compare in sensitivity to the UCC method which is now able to define VCM in vinyl resins at a level of reliability of <0.5 ppm based on resin weight.

Regards,

J. John Brezinski
J. John Brezinski

JJB:pw

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