



Air Products and Chemicals
INC.

ESCAMBIA PLANT

INTEROFFICE MEMORANDUM

cc: J. T. Rame
T. J. Carey/H.W.
WML

To: Mr. A. K. McMillan

Date: 31 January 1974

From: R. R. Spiegelhalter

Copies: R. E. Jones
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Re: Vinyl Chloride Vapor Levels in
the PVC Plant - Preliminary Data

Preliminary data have been obtained on the concentration levels of vinyl chloride vapors in various areas of the PVC plant. The results are summarized in attached tables. The levels are reported for individual samples taken in some areas and are reported as a range in others. Sampling areas are referenced to the schematics prepared by D. H. Francke where applicable.

Sampling Procedure

Samples were collected in a conventional gas bag (rubber balloon) by aspiration and carried to the laboratory for analysis. Composite samples in a given plant area were obtained by walking through the area. The sampling probe was held at waist level. Approximately a liter of air sample was obtained over a period of 30-45 seconds.

Analytical Procedure

Air samples were analyzed by vapor phase chromatography using flame ionization detection and a column packed with a mixture of Poropak Q and Poropak S. A 0.5 cc sample was injected through a gas sampling valve. Standard calibrations were made by careful dilution of monomer vapors with air using a 100 ml syringe.

Accuracy and Precision

The precision of standards was shown to be 5%. Precision of sample replicates was $\pm 5\%$ and the accuracy $\pm 10\%$.

Comments

The sampling procedure employed was an expedient. "Grab" samples of gases are not totally reliable. Development of a continuous sampling system is recommended. Analysis by VPC using a column to separate monomer from other hydrocarbons present should be continued.


R. R. Spiegelhalter

RRS:fls
Attachments : 3

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TABLE I
COMPOSITE AIR SAMPLES

Polymerization Building

First Floor
Second Floor
Third Floor

VCI Levels Found

2, 5, 13, 1530 ppm
5 - 15 ppm
5 - 50 ppm

Finishing Building

Levels 2 & 3 - Rolex Screen Area
Level 4 - Product Collector Area

1 ppm
1 - 2 ppm

Bagging Room

First Floor - Bagging Machine Area
Second Floor - Holding Bin Area

1 - 2 ppm
1 - 2 ppm

Warehouse

North Side of Building, Outside,
Ground Level (below relief valve vent
and outside the Nash recovery unit)

2 ppm

10 - 180 ppm

31/1/74

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TABLE II
SPECIFIC EQUIPMENT AREA COMPOSITE SAMPLES

<u>First Floor Reactor Building</u>	<u>VCI Levels</u>
Recovery Compressors Middle of Floor (Area 4)	1 - 2%
Blend Tanks (West end of floor) (Area 6)	5 - 10 ppm
Monomer Charge Pumps (east end of floor - Area 6)	2 - 5 ppm
Blend Tank Area During Batch Drop	40 ppm
At Blend Tank Vent (outside) During Batch Drop	1340 ppm
10 Feet From Blend Tank Vent During Batch Drop	79 ppm

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