Air Products and Chemicals INC.

ESCAMBIA PLANT

INTEROFFICE MEMORANDUM

To: Mr. R. E. Jones

Date: 18 February 1974

Copies: E. A. Primeau
R. R. Spiegelhalter
E. A. Ray

From: A. K. McMillan

Re:

Mr. John Barr called to pass along new procedures we are required to follow as directed by Mr. Fleming. These things are now being done at Calvert City. We are to measure the VCl concentration in all shipments at the time of shipping. My understanding is that we now take a composite during bulk loading and a portion of this can be obtained in the proper container for VCl analysis. On bag shipments a composite sample can be made by thieving some bags from 3 or 4 skids. If we do not have equipment or manpower to handle this then we are to get it.

Dr. Mantell has been directed to follow through on shipments from selected shipments from our plant to measure the decay in VCl concentration to and through the customers' plants. We should attempt as far as possible to try to tie in the VCl measurements being taken on the slurries to measure the decay from this point on. It is understandable that all slurries cannot be properly tied in to the final shipment. You cannot do all these samples but do what you are able to get some reliable measurements.

As time permits you may be able to obtain some measurements of decay in VCl concentration from slurry through bulk and bag storage to the final shipment. Calvert City is presently making these measurements and will send a copy of the results they have obtained. Their concentrations range between 74 to 600 ppm. Calvert City gets behind at times on running these analyses. When this occurs they toss out the old samples and analyze the most current samples. You can get in touch with Calvert City to obtain any analytical and sampling procedures you need.

By copy of this memo R. R. Spiegelhalter will see that this gets instituted as quickly as possible and advise when it will be accomplished. I am sure that you understand that Mr. Fleming would like to have seen this in operation as of yesterday.

A. K. McMillan

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Air Products and Chemicals INC.

ESCAMBIA PLANT

INTEROFFICE MEMORANDUM

To: Distribution

Date: 18 February 1974

Copies: A. K. McMillan
R. E. Jones
R. R. Spiegelhalter
M. H. Stermon
W. J. Zubyk

From: R. W. Wolfe

Re: Status of VPC Method for Vinyl Chloride Monomer

Introduction

Evaluation of VPC procedures for determining impurities particularly 1, 3 - butadiene and methyl chloride is in progress. Vinyl chloride VPC procedures from B. F. Goodrich, Conoco, APCI Calvert City, Cumberland Chemical Corp., and Allied Chemical Corp. have been obtained and are being evaluated along with procedures developed at the Escambia APCI plant.

Summary

1. Twenty-two VPC columns have been evaluated for low boiling impurities in Vinyl chloride.

2. The best column thus far consists of a combination of 7' X 1/4" teflon packed with 80/100 mesh porapak S followed by 10' X 1/4" teflon packed with 20% carbowax 400 on acid washed 60/80 mesh chromosorb W.

3. Preliminary results using the combination column indicates the virgin monomer in both the East and West storage tanks contain about 10 ppm methyl chloride and less than 10 ppm 1, 3 - butadiene which is the limit of detection for butadiene on this column. Recovered monomer in the North tank contained about 900 ppm methyl chloride and 5 ppm propylene. 1, 3 butadiene was not detected.

4. No other low boiling impurities have been detected by VPC on either virgin or recovered monomer.

5. High boiling impurities such as di chloro ethylenes and tri chlorothylene have not been investigated.

Discussion

Evaluation of low boiler VPC impurities in vinyl chloride monomer included the following VPC columns:

A. K. McMILLAN

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(1) 6' X 1/4" teflon column packed with 20% carbowax 1500 on chromosorb P 60/80 mesh. (B. F. Goodrich procedure)

(2) 9' X 1/4" aluminum column packed with 20% 9:1 dioctyl phthalate and glycerine on 80/100 mesh acid washed chromosorb P. (APCI Calvert City procedure)

(3) 12' X 1/4" aluminum column packed with 10% carbowax 1500 on teflon (Cumberland Chemical procedure)

(4) 20' X 1/4" aluminum column packed with 25% Pluronic 84 on 60/80 mesh acid washed chromosorb P. (Allied Chemical procedure).

(5) 6' X 1/4" teflon column packed with 80/100 mesh poropak Q.

(6) 7' X 1/4" teflon column packed with 80/100 mesh poropak S.

(7) 6' X 1/4" teflon column packed with 80/100 mesh poropak R.

(8) 20' X 1/4" aluminum column packed with 21% propylene carbonate on alumina F-1.

(9) 10' X 1/4" teflon column packed with 20% GV-17 on acid washed 80/100 mesh chromosorb W.

(10) 10' X 1/4" teflon column packed with 20% carbowax 4000 on 80/100 mesh acid washed chromosorb W.

(11) 10' X 1/4" aluminum column packed with 20% carbowax 400 on 60/80 mesh acid washed chromosorb W.

(12) 25' X 1/4" aluminum column packed with 20% carbowax 400 on 60/80 mesh acid washed chromosorb W.

(13) 7' X 1/4" teflon column packed with 80/100 mesh poropak S followed by 10' X 1/4" teflon column packed with 20% carbowax 400 on 60/80 mesh acid washed chromosorb W.

(14) 6' X 1/4" aluminum column packed with alumina F-1

(15) 6' X 1/4" teflon packed with 100/150 mesh porosil A

(16) 15' X 1/4" teflon packed with 10% DOP on 100/120 mesh H P Chromosorb G

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(17) 6' X 1/4" teflon packed with Duropak carbowax 400 on porosil C 100/120 mesh.

(18) 6' X 1/4" teflon packed with Duropak OPN on porosil C 80/100 mesh.

(19) 6' X 1/4" teflon column packed with porosil B 100/150 mesh.

(20) 6' X 1/4" teflon packed with Durapak n - octane on porosil C 100/150 mesh.

(21) 6' X 1/4" aluminum column packed with alumina GSC - 121

(22) 6' X 1/4" aluminum column packed with alumina GSC - 120.

R. W. Wolfe

R. W. Wolfe

RWW:bp

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