

This article was downloaded by:

On: 25 January 2011

Access details: *Access Details: Free Access*

Publisher *Taylor & Francis*

Informa Ltd Registered in England and Wales Registered Number: 1072954 Registered office: Mortimer House, 37-41 Mortimer Street, London W1T 3JH, UK



## Separation Science and Technology

Publication details, including instructions for authors and subscription information:

<http://www.informaworld.com/smpp/title~content=t713708471>

### The use of Phase Separation Paper to Remove Large Amounts of Water during Odor Analysis

Richard James<sup>a</sup>; Richard Entz<sup>a</sup>; C. E. Meloan<sup>a</sup>

<sup>a</sup> Department of Chemistry, Kansas State University, Manhattan, Kansas

**To cite this Article** James, Richard , Entz, Richard and Meloan, C. E.(1976) 'The use of Phase Separation Paper to Remove Large Amounts of Water during Odor Analysis', *Separation Science and Technology*, 11: 5, 497 — 498

**To link to this Article:** DOI: 10.1080/01496397608085338

URL: <http://dx.doi.org/10.1080/01496397608085338>

## PLEASE SCROLL DOWN FOR ARTICLE

Full terms and conditions of use: <http://www.informaworld.com/terms-and-conditions-of-access.pdf>

This article may be used for research, teaching and private study purposes. Any substantial or systematic reproduction, re-distribution, re-selling, loan or sub-licensing, systematic supply or distribution in any form to anyone is expressly forbidden.

The publisher does not give any warranty express or implied or make any representation that the contents will be complete or accurate or up to date. The accuracy of any instructions, formulae and drug doses should be independently verified with primary sources. The publisher shall not be liable for any loss, actions, claims, proceedings, demand or costs or damages whatsoever or howsoever caused arising directly or indirectly in connection with or arising out of the use of this material.

**NOTE**

**The Use of Phase Separation Paper to Remove Large Amounts of Water during Odor Analysis**

RICHARD JAMES, RICHARD ENTZ, and C. E. MELOAN

DEPARTMENT OF CHEMISTRY

KANSAS STATE UNIVERSITY

MANHATTAN, KANSAS 66506

The device shown in Fig. 1 was found quite effective in removing large quantities of water from odor components. Water has always been a problem in odor component analysis because it deactivates chemical absorbers and hastens the degradation of chromatographic columns. This was clearly brought home to us once again during the examination of corn odors. The odor components are not especially volatile and are in low concentration. In order to increase the quantity of material coming from the corn, the corn was gently warmed. This caused large amounts of water vapor to be evolved which ruined the texture and absorption capacity of the chemical absorber being used. In order to remove the water and let the organic com-

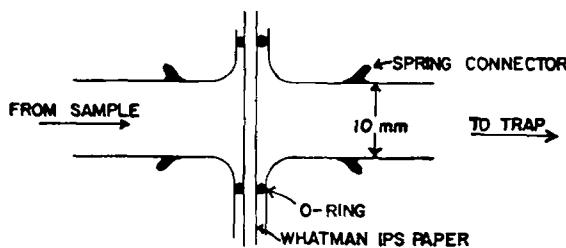


FIG. 1.

ponents pass, a piece of Whatman IPS, phase separation paper was placed in the vapor line. Phase separation paper is filter paper treated with a silicone which makes it nonwettable by water yet lets organic compounds pass through. Experience had shown us it worked well for separating liquids in two phases, and we found that it also works for separating gases. There is a build-up of back pressure but it was far less than that required to burst the line. After a few hours some water gets through; apparently the silicones are partially dissolved by the organic compounds. However, even then the vast majority of the water is still removed. We feel this technique may be of some use to other investigators, particularly since we know that few are aware of phase separation paper and what it can do.

*Received by editor January 29, 1976*