

Figure 4: Chromatogram of a lifetime test on Symmetry C₈.

Good column durability saves time and money. We therefore developed an accelerated column aging test to determine column lifetime (figure 4). Using Symmetry columns mean less down time and less cost.

The new technology behind Symmetry allows chemists to quickly and efficiently develop accurate and precise methods and maintain these methods in a state of control and validation.

For further information on Symmetry, please circle box number 1 on your reply card.

Multi component peak purity analysis with PDA detection

950110-02

The use of Photodiode Array detectors (PDA) to assess peak purity has significantly aided chromatographers in identifying coelution. Coeluting compounds can be detected by comparing the apex spectrum mathematically with the spectra at each time point across a peak. Since its introduction in 1992 the Waters 996 PDA has incorporated one of these mathematical tools - and now, Waters has developed an additional tool to help simplify the determination of just how many impurities may be under the peaks of interest.

In order to demonstrate this technique, the following experiment was carried out: a test compound was spiked with an impurity of ethylparaben and acetophenone (figure 1). The data was then analysed utilising the Multicomponent Peak Purity algorithm which allows for the detection of up to 4 separate impurities. The system automatically carries out a number of "steps" or "passes" which sequentially will identify the points of maximum spectral impurities as shown in figure 2. It is therefore straightforward to conclude that for this sample the two impurities have been easily indentified.

This example clearly demonstrates

Figure 1: Three component mixture with two impurities. The peak is symmetrical with no evidence of a valley or shoulder because the concentration of the impurity is very low.

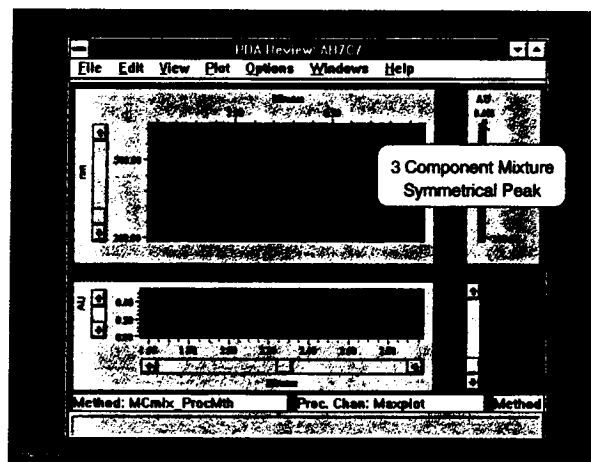
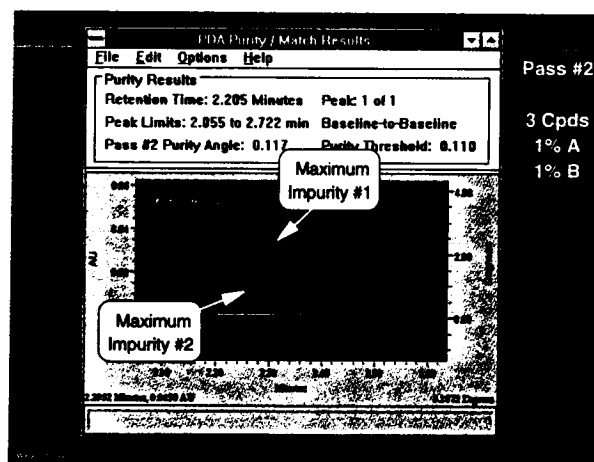


Figure 2: Maximum spectral impurities are clearly visible as indicated by the red vertical lines.



with the new Millennium software provides an efficient way of performing multiple peak purity analyses. With up to four purity evaluations per peak, you can not only determine whether a peak is

of multiple impurities that may be disguised as one peak.

If you would like to learn more about the Waters 996 PDA detector, please circle number 2