

*'...normal phase chromatography*

*using UV transparent eluents with cyano (CN) columns has been*

*successfully employed for profiling various surfactant formulas...'*



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01-0369-00

### Non-Ionic Surfactants

Non-ionic surface active agents are used in the preparation of a wide range of foods, cosmetics and pharmaceutical products including emulsions, creams, ointments and suppository bases. HPLC analysis of formulations containing non-ionic surfactants may be complicated by a number of factors:

- (i) Lack of pure standards for chromatographic analysis;
- (ii) Insolubility of some samples in reversed phase solvents;
- (iii) Detection problems, *e.g.*, poor UV absorbance;
- (iv) Selection of an appropriate column for the MW range of samples;
- (v) Complexity of surfactant samples, owing to differing degrees of esterification and ethoxylation.

Identification of individual components of surfactant mixtures is seldom required for quality control purposes. Instead, chromatographic 'fingerprints' are compared in order to detect batch to batch variations. Normal phase chromatography using UV transparent eluents with cyano (CN) columns has been successfully employed for profiling various surfactant formulas.

#### Keywords:

Non-ionic surfactants, normal phase, CN columns

In Figures 1 and 2, the analyses of two different samples of commercially available non-ionic surfactants are shown. Although baseline resolution of all peaks is not observed under the isocratic elution conditions chosen, separations are relatively fast and the resulting fingerprints adequately characterise the respective samples.

#### Conditions

Column: Spherisorb S5 CN,  
250 mm x 4.6 mm ID  
Guard: Spherisorb S5 CN,  
50 mm x 4.6 mm ID  
Mobile Phase: Isopropanol, hexane (15:85)  
Flow Rate: 2 ml/min  
Detection: UV at 215 nm

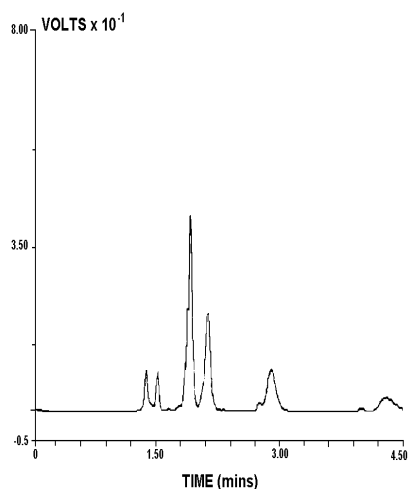


Figure 1 Sample A

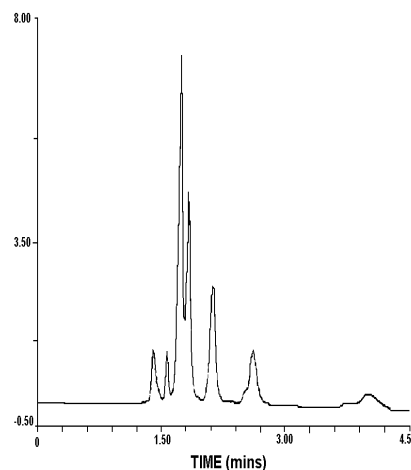
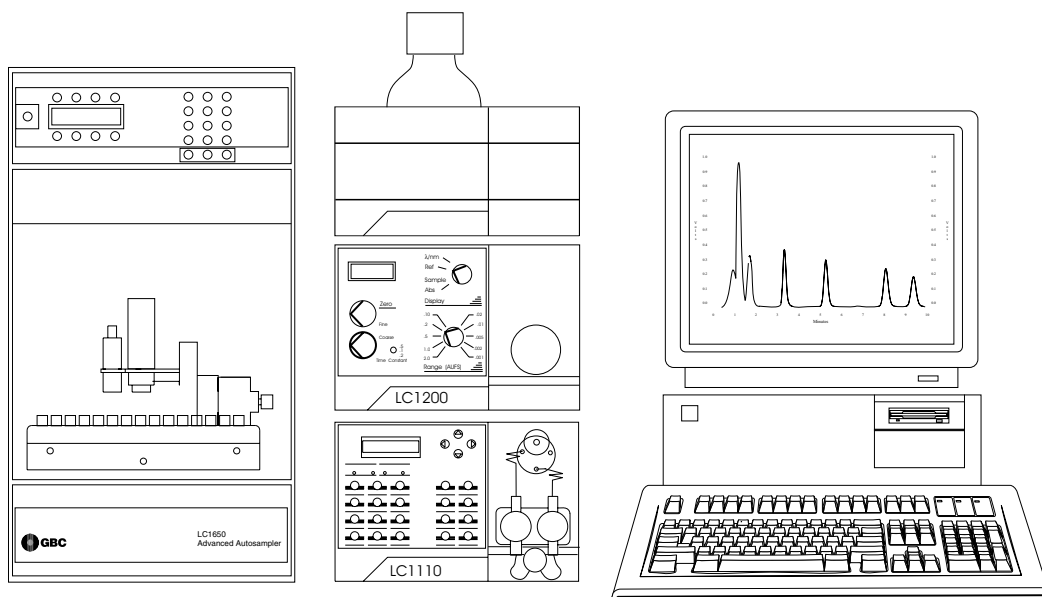


Figure 2 Sample B

## GBC HPLC Instrumentation

LC1110 Dual Piston HPLC Pump  
LC1650 Advanced Autosampler  
LC1200 Variable Wavelength UV/Vis  
Detector  
WinChrom Chromatography Data  
Management System  
LC1445 System Organiser



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01-0369-00

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GBC publication number 01-0369-00  
September, 1995