Application Note

620015X

Analysis of Parabens Using Extreme Liquid Chromatography (X-LC®)

Introduction

Parabens, esters of p-hydroxybenzoic acid, are used as preservatives in cosmetics and foods. Common parabens include methylparaben, ethylparaben, propylparaben, and butylparaben. Quality control demands to determine these esters content. HPLC has been used for this analysis. An increase in the number of samples to be measured requires high throughput analysis. To this analysis, we have applied extreme high pressure liquid chromatography system (X-LC) equipped with a separation column having a 2 µm packing material.

Experimental

The system used for the measurement consists of a 3185PU pump, 3080DG degasser, 3067CO column oven, 3070UV UV/Vis detector, 3059AS autosampler and a chromatography data system.

Results and Discussion

Figure 1 shows the chromatogram of a standard mixture of parabens and p-hydroxybenzoic acid. This chromatogram indicates that each paraben elutes with a good separation within a minute. As shown above, an X-LC column (X-pressPak C18, 2.1 mm x 50 mm, 2 µm) enables to reduce a separation time by a factor of approximately 10, resulting in a high throughput analysis and a decrease in consumption of solvent.

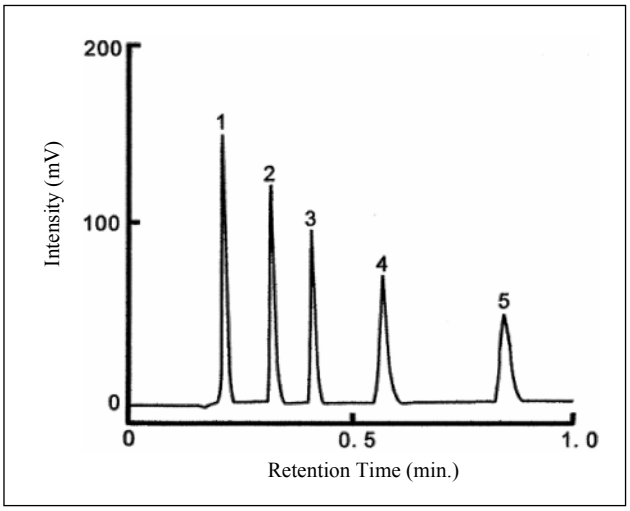

Figure 1 Chromatogram of standard mixture of parabens and p-hydroxybenzoic acid
Peaks: 1=p-hydroxybenzoic acid, 2=methylparaben, 3=ethylparaben, 4=propylparaben, 5=butylparaben. Χονχεντρατιον: 0.02 µγ/µΛ (εαχη). Ινφεχτιον ϖολυμε: 1 µL. Column: X-PressPak C18S (2.1 mm I.D. x 50 mmL, 2 µm) Column temperature: 40° C Mobile phase: 0.1% H_3PO_4 / CH_3CN (50/50) Flow rate: 0.6 mL/min. Detection wavelength: 254 nm Measurement pressure: 40 MPa
* p-Oxybenzoate Ester is p-Hydroxy benzoate.

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