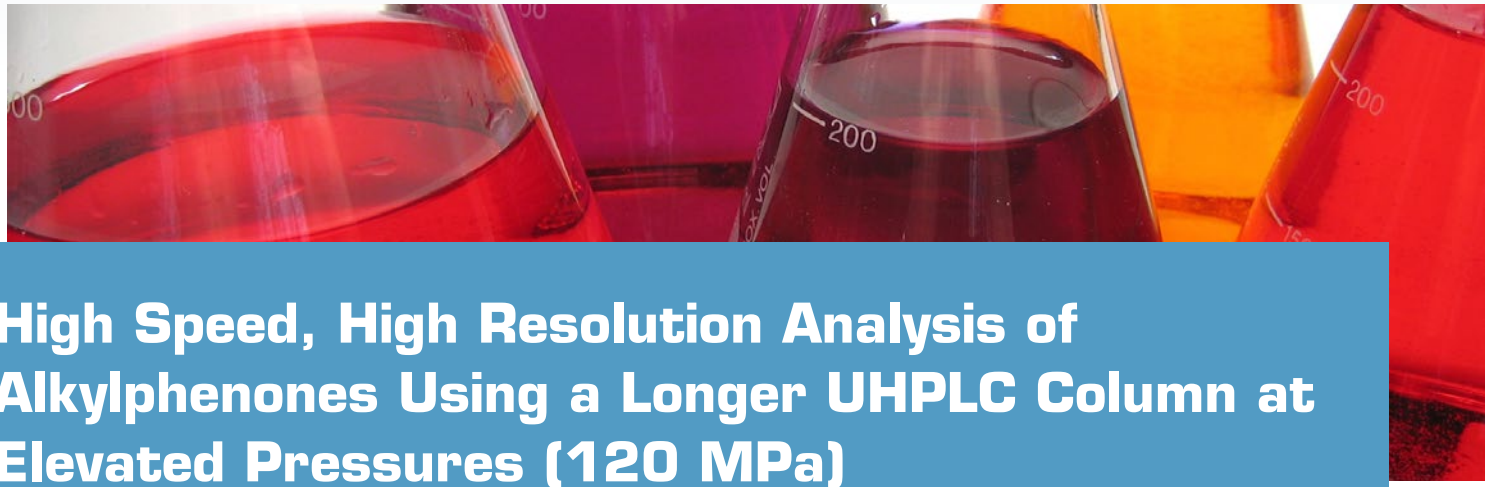
Application Note



High Speed, High Resolution Analysis of Alkylphenones Using a Longer UHPLC Column at Elevated Pressures (120 MPa)

Introduction

In UHPLC one of the problems associated with taking advantage of the increased theoretical plates and higher resolution offered by longer columns packed with sub 2um phases is the extremely high back pressure at higher flow rates. This is made worse when water/methanol or water/ethanol mobile phases are used for gradient elution; even higher pressure will be caused by the increases in viscosity. To overcome these potential problems JASCO now offers the UHPLC system that can operate under the extremely high pressures up to 130 Mpa (19,500 psi).

JASCO UHPLC system at *www.jascoinc.com*

In this application note the JASCO X-LC-130 system was used for the fast analysis of alkylphenones using a sub 2um column with 150mm length at 1mL/min and with high column operating pressure (120 MPa).

Keywords

UHPLC, alkylphenones, 130 MPa, 1.8 µm, C18 column, PDA detector

JASCO INC.
28600 Mary's Court, Easton, MD 21601 USA
Tel: (800) 333-5272, Fax: (410) 822-7526
Application Library: http://www.jascoinc.com/applications

Experimental

Equipment

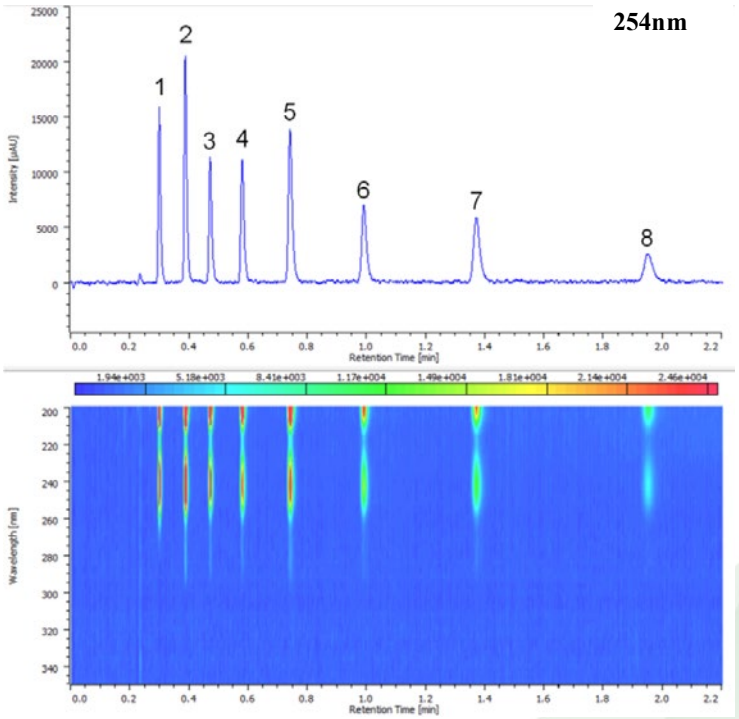
Pump:	X-LC 3185PU-130
Degasser:	X-LC 3080DG
Column Oven:	X-LC 3067CO
Autosampler:	X-LC 3159AS-130
Detector:	X-LC 3110MD

Conditions

Column:	ZORBAX RRHD SB-C18 (2.1 mmID x 150 mmL, 1.8 µm)
Eluent:	Water/Acetonitrile (30/70)
Flow rate:	1.0 mL/min
Column Temp:	40 °C
Wavelength:	254 nm
Injection Volume:	1 µL
Pressure:	120 MPa
Standard Sample:	Acetanilide, Acetophenone, Propiophenone, Butyrophenone Valerophenone, Hexanophenone, Heptanophenone, Octanophenone (2 µg/mL each)

Results

The chromatogram and contour plot of standard mixtures of alkylphenones are shown in Fig. 1. The result was obtained only within two minutes with good separation.



1: Acetanilide
2: Acetophenone
3: Propiophenone
4: Butyrophenone
5: Valerophenone
6: Hexanophenone
7: Heptanophenone
8: Octanophenone

Fig. 1. Chromatogram of Standard Mixtures of Alkylphenones.

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