



Waters

THE SCIENCE OF WHAT'S POSSIBLE.™

- ACQUITY UPLC Column Chemistries expanding

- HPLC to UPLC Method Transfer Tools:
 - ❖ HPLC –UPLC Method Calculator
 - ❖ Column Selectivity Chart
 - ❖ H-Class Method Transfer Kit (variety of col. Chem)

- Detectors : TUV, PDA, ELSD, FLR, MS, MS/MS,ToF

- Expanded Family of UPLC Technologies
 - ❖ Classic –Acquity UPLC BSM
 - ❖ 2D-Nano Acquity UPLC BSM
 - ❖ Acquity H-Class UPLC (Quarternary sys)
 - ❖ Acquity H-Class Bio UPLC (Quarternary sys)
 - ❖ “new” – Acquity I Class UPLC (18K psi BP, lower sys vol)
 - ❖ “new” – Acquity UPSFC

Current Acquity UPLC Columns now available:

- Only one column chemistry – BEH C18 was available in 2004 at time of intro.
- Today are a range of chemistries that are available. And the list will continue to grow.
- They are listed in the USP.
 - BEH C18
 - BEH RP C18 (embedded polar group)
 - BEH C8
 - BEH Phenyl
 - HILIC (Hydrophobic Interaction Liq.Chrom)
 - HSS T3
 - CHS (not yet listed)
 - ICX (not yet listed)

L1 Octadecyl silane (ODS or C₁₈) chemically bonded to porous silica or ceramic particles - 1.7 to 10 micron in diameter. See new subclassification table on previous page.

Brand	Particle Size	Type	Page
ACQUITY UPLC™ BEH C ₁₈	1.7	Sph	242
ACQUITY UPLC™ Shield RP ₁₈	1.7	Sph	242

L3 Porous silica particles - 5 to 10 micron in diameter.

Brand	Particle Size	Type	Page
ACQUITY UPLC™ BEH HILIC	{1.7}	Sph	242

L7 Octyl silane (C₈) chemically bonded to porous silica particles - 1.7 to 10 micron in diameter.

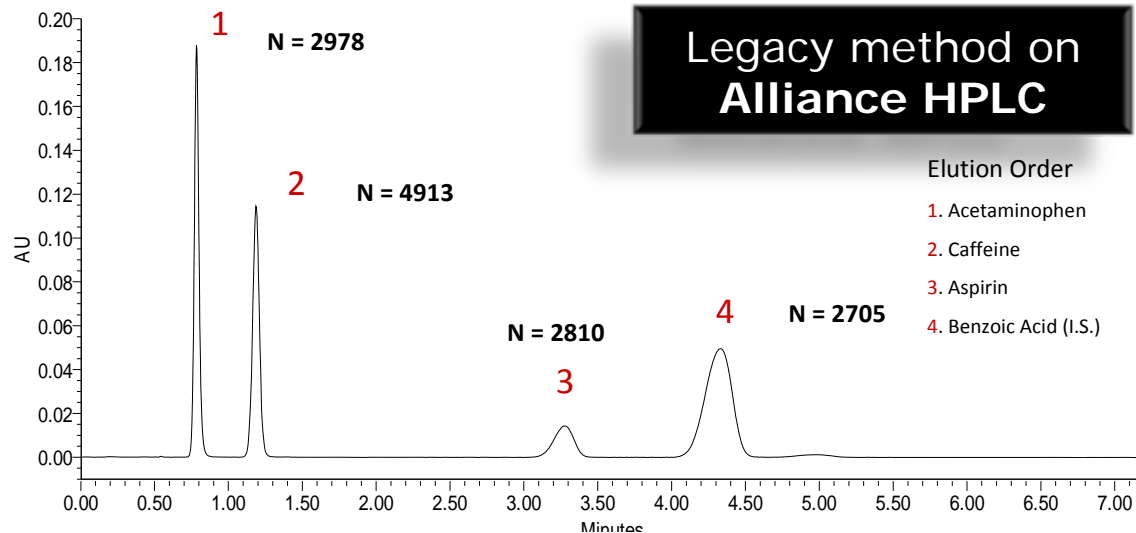
Brand	Particle Size	Type	Page
ACQUITY UPLC™ BEH C ₈	1.7	Sph	242

L11 Phenyl groups chemically bonded to porous silica particles - 1.7 to 10 micron in diameter.

Brand	Particle Size	Type	Page
ACQUITY UPLC™ BEH Phenyl	1.7	Sph	242

Routine Analytical Tool to Run Legacy HPLC Methods

USP Method for Excedrin

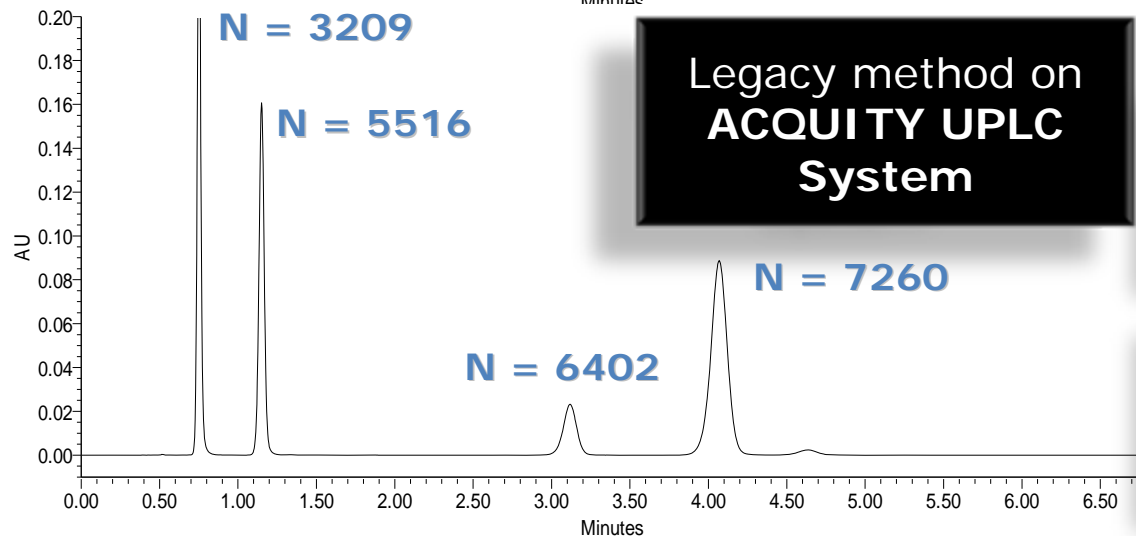


HPLC Conditions:

Column: XBridge™ C18 4.6 x 100 mm, 5 µm
Mobile Phase A: 73:23:3 water, methanol, acetic acid
Flow Rate: 2.0 mL/min
Injection Volume: 10.0 µL
Sample Concentration:

100 µg/mL Acetaminophen
100 µg/mL Aspirin
26 µg/mL Caffeine
360 µg/mL Benzoic Acid (I.S.)

Sample Diluent: 73: 23: 3 H₂O:MeOH, CH₃COOH
Column Temperature: 45 °C
Detection: UV @ 275 nm
Sampling Rate: 5.0 pts/sec
Filter Response: 0.1
Instruments: Alliance™ 2695 Separations Module with Waters 2996 Photodiode Array Detector or ACQUITY UPLC with ACQUITY UPLC TUV Detector



NO SYSTEM MODIFICATIONS NECESSARY!

**Same elution time
Higher efficiency
Higher sensitivity**

THE UPLC FAMILY

Sample limited to manufacturing

Capillary separations
with 2D capability



In process monitoring



A full range of
ACQUITY systems to meet
specific business challenges

Supercritical Fluid Technology: A Powerful Tool for the Nutritional Industry

by Jose L. Martinez, Ph.D. Application and Lab manager at Thar Technologies

In the last decade, new trends have emerged in the food industry. These trends include an

Gentle, Clean, Green Extraction – The Natural Solution

Thar's Supercritical Fluid Extraction (SFE) systems extract chemical compounds using supercritical fluid instead of an organic solvent.



- SFE 100
- SFE 500
- SFE 1000
- SFE 2000
- SFE 5000
- SFE 2 X 5 LF

The Challenge: Separating and detecting enantiomeric impurities.

Introducing the ACQUITY UPSFC™ System from Waters®

Built on our UPLC® platform that revolutionized the industry by introducing sub-2- μm particle chemistry, this game-changing UPSFC™ solution enables you to confidently conduct normal phase chromatographic separations using carbon dioxide rather than hexane, heptane, or chlorinated solvents in the mobile phase. Now you can minimize harmful waste while gaining superior resolution, speed, and sensitivity.

UltraPerformance SFC™ technology offers the ruggedness and reliability you're looking for, with the ease of use you've come to expect from liquid chromatography. This system is also an ideal complement to reversed phase LC that enables you to pursue uncharted scientific territory with confidence.

As a holistically designed system, ACQUITY UPSFC maximizes the benefits of Waters chemistries and informatics to drive a wide range of great scientific endeavors — including chiral and achiral applications. Together with Waters, you'll be able to chart entirely new areas of science.



ACQUITY UPSFC System.

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- The End.