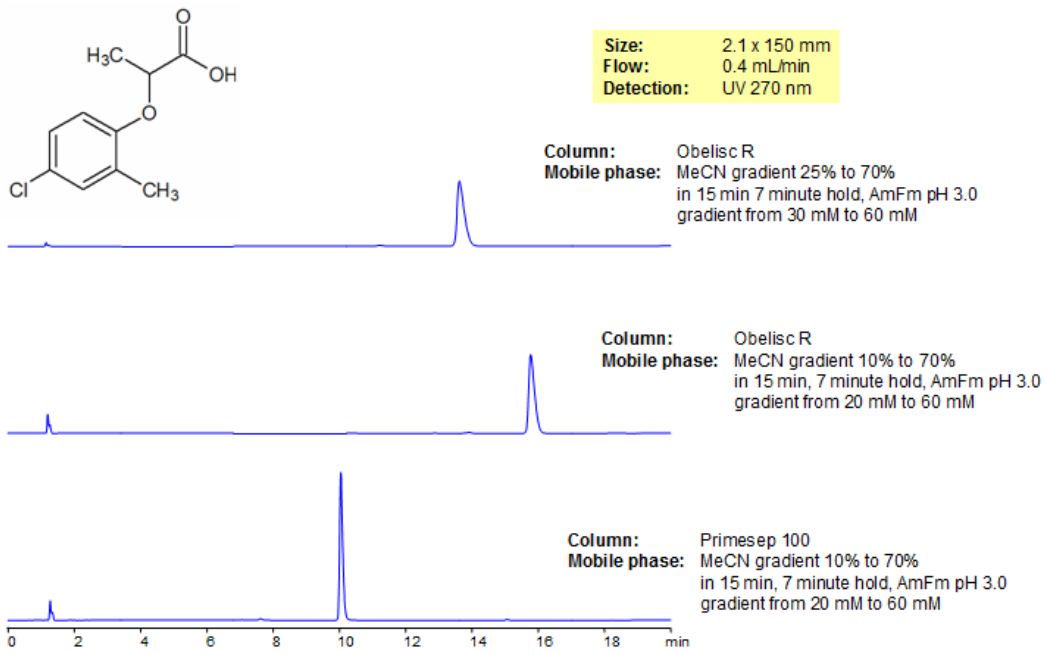
Mecoprop Analysis on Primesep and Obelisc Mixed-Mode HPLC Columns



Mecoprop or methylchlorophenoxypropionic acid (MCPP) is a common herbicide found in many weed-killing/fertilizer products. The EURL (European Union Reference Laboratory) placed mecoprop in an Analysis of Acidic Pesticides using QueChERS method. Obelisc R and Primesep 100 were used to retain mecoprop, each with unique selectivity due to multiple modes of separation. Obelisc R contains embedded ion-pairing groups and a long hydrophobic chain, while Primesep 100 contains acidic ion-pairing groups. Method is LC/MS compatible and capable of retaining many different pesticides.

SIELC has developed the Obelisc™ columns, which are mixed-mode and utilize Liquid Separation Cell technology (LiSC™). These cost-effective columns are the first of their kind to be commercially available and can replace multiple HPLC columns, including reversed-phase (RP), AQ-type reversed-phase, polar-embedded group RP columns, normal-phase, cation-exchange, anion-exchange, ion-exclusion, and HILIC (Hydrophilic Interaction Liquid Chromatography) columns. By controlling just three orthogonal method parameters - buffer concentration, buffer pH, and organic modifier concentration - users can adjust the column properties with pinpoint precision to separate complex mixtures.

Method Parameters

Column	Primesep 100, 2.1×150 mm, 5 µm, 100 Å
Mobile Phase	Gradient MeCN – 10-70%, 15 min, 7 min hold
Buffer	Gradient AmAc pH 3.0- 20-60 mM, 15 min, 7 min hold
Flow Rate	0.4 mL/min
Detection	UV, 270 nm

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