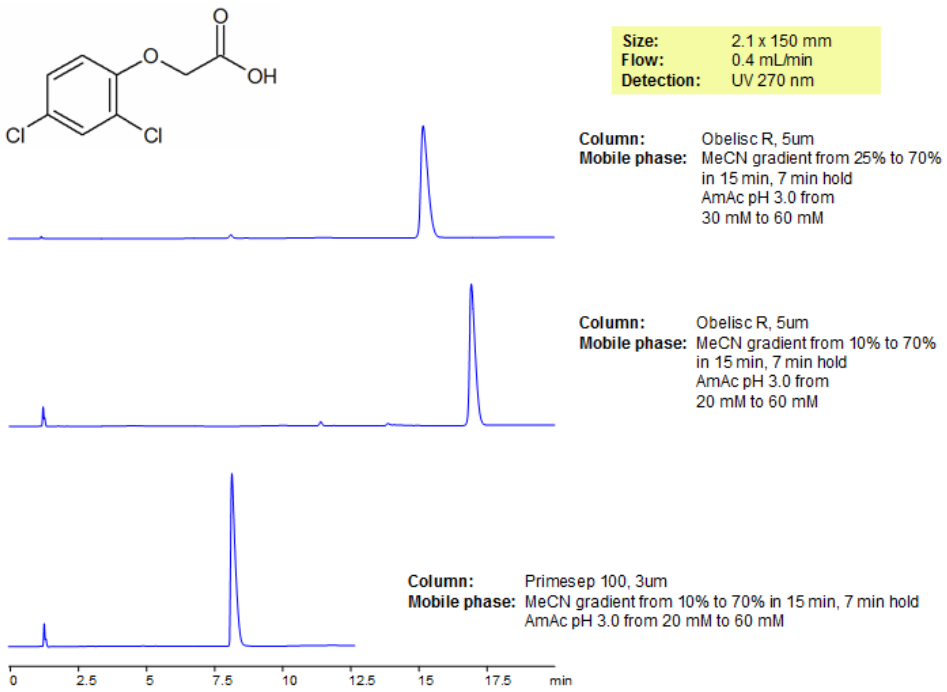
2,4-D Retention on Primesep 100 and Obelisc R



2,4-D makes up half of the formula for Agent Orange, the defoliant that was used during the Vietnam War and Malayan Emergency. Commonly used in lawn and turf pesticides, 2,4-D is typically mixed with other pesticides such as mecoprop and dicamba. It was analyzed on Primesep 100 and Obelisc R. Primesep 100 separates using reverse-phase and acidic ion-pairing groups. Obelisc R has many modes of separation which allow it to tune retention. Method is LC/MS compatible and conditions could be replicated to retain many 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%
Buffer	Gradient AmAc pH 3.0- 20-60 mM
Flow Rate	0.4 mL/min
Detection	UV, 270 nm

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