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# Automated Solid Phase Extraction (SPE) of Urons in Drinking Water

## INTRODUCTION

Urons are a class of pesticide called Urea herbicide that needs to be checked in drinking water at trace levels because they are a common class of contaminant found in surface water. This SPE method provides a quick and simple means of concentrating the components using controlled flow rates and volumes that will consistently produce good recoveries.

## INSTRUMENTATION USED FOR SAMPLE PREPARATION

Dionex AutoTrace® instrument

## SAMPLE PREPARATION

- A 1000 mL sample of water is taken.
- The solvent mixture of methanol and acetonitrile are used as an eluent.
- A 3 mL SPE cartridge packed with 200 mg of Waters Oasis HLB or a 60 mg Strata-X from Phenomenex can be used.
- The eluent can be dried using an in-line anhydrous sodium sulphate cartridge.

## AUTOTRACE METHOD AND CONCLUSION

All solvent lines are purged and primed with solvent. A maximum of five solvents can be used to run a wide range of methods. Independent lines separate the aqueous and organic waste solvents. The instrument sample rack has six positions that can take volumes from 10 to 2000 mL and six sample collection positions for the eluent. This method offers an automated rugged and reproducible solution for cleaning up the samples to concentrate and remove interferences.

No.	Method: Estimated time 1h 31 min
1	Process six samples using the following method steps:
2	Condition column with 5.0 mL of CH <sub>3</sub> OH into solvent waste.
3	Condition column with 5.0 mL of water into aqueous waste.
4	Load 1000.0 mL of sample into columns.
5	Rinse column with 5.0 mL of water into aqueous waste.
6	Wash syringe with 5.0 mL of CH <sub>3</sub> OH: CH <sub>3</sub> CN 50:50.
7	Dry column with gas for 15.0 min.
8	Collect 6.0 mL fraction into sample tube using CH <sub>3</sub> OH: CH <sub>3</sub> CN 50:50.
9	Wash syringe with 5.0 mL of CH <sub>3</sub> OH.
10	End

## PARAMETERS:

### Flow Rates

Cond Flow:	15.0 mL/min
Load Flow:	10.0 mL/min
Rinse Flow:	20.0 mL/min
Elute Flow:	5.0 mL/min
Cond Air Push:	15.0 mL/min
Rinse Air Push:	20.0 mL/min
Elute Air Push:	5.0 mL/min

### SPE Parameters

Push Delay:	5 sec
Air Factor:	1.0
Autowash Vol.:	1.00 mL

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## Instrument Parameters

Max. Elution Vol.: 12.0 mL  
Exhaust Fan On: Yes  
Beeper On: Yes

## Solvent Set: Urons

### Solvent Number Nomenclature

Solvent: 1 CH<sub>3</sub>OH  
Solvent 2: Water  
Solvent 3: CH<sub>3</sub>OH: CH<sub>3</sub>CN 50:50  
Solvent 4: Solvent 4  
Solvent 5: Solvent 5

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