EPA METHOD 532.0

Phenylurea pesticides that were introduced worldwide in the 1950s are used commercially on a wide range of food crops. Subsequently determined to possess a significant toxicological risk, the agricultural runoff of these compounds may be found in drinking water supplies. The United States Environmental Protection Agency (US EPA) requires that drinking water and raw surface water be monitored for the presence of Phenylurea pesticides and related compounds using EPA Method 532.0. The European Union (EU) regulation regarding drinking water (EC Directive 98/83/EC), provides a general rule for pesticides and metabolites. This regulation limits the maximum admissible concentration (MAC) at 0.1 ppb for each individual component, with the total concentration not to exceed 0.5 ppb.

HPLC CONDITIONS

Instrument:	Waters Alliance® HPLC system with 2996 PDA detector		
Eluent:	A: 25 mM Phosphate, pH 2.4		
	B: Acetonitrile		
Column:	SunFire™ C ₁₈ , 3.5 µm 4.6 x 150 mm @ 30 ℃		
Injection:	20 µL		
Flow rate:	1.5 mL/min		
Detection:	PDA UV @ 245 nm		
Data:	Waters Empower™ software		

SAMPLE PREPARATION

Oasis® SPE Method for Pheylurea Pesticides Method for Oasis HLB Cartridge, 6 cc, 200 mg

PREPARE SAMPLE: Adjust to pH 3				
CONDITION: 3 mL MTBE				
RINSE: 3 mL methanol				
RINSE: 3 mL H ₂ O				
LOAD: Up to 500 mL sample				
WASH: 2 mL 5% methanol in H₂O				
ELUTE: 5 mL 1:1 ACN/methanol, evaporate				
RECONSTITUTE: 1.0 mL initial mobile phase (500:1 sample enrichment)				

STANDARD PREPARATION

Pipette 100 μ L of AccuStandard[®] mix M-532 and 20 μ L mix M-532-SS into 880 μ L 1:1 water/acetonitrile (10 ppm analytes plus surrogates).

ELUENT PREPARATION

A: 25 mM phosphate

Dissolve 1.7 g of potassium dihydrogen phosphate (KH₂PO₄) and 850 μ L phosphoric acid (H₃PO₄) in 100 mL water. Dilute to 1 L, then filter and degas. Verify that the pH is approximately 2.4.

B: Acetonitrile

PHENYLUREA COMPOUNDS

EPA METHOD **532.0**

Determination of Phenylurea Compounds in Drinking Water b Solid Phase Extraction and High Performance Liquid Chromatography with UV Detection

Time	Flow	%A	%В	Curve
-	1.5	60	40	-
9.5	1.5	60	40	6
10.0	1.5	50	50	6
14.0	1.5	40	60	6
15.0	1.5	60	40	6

Eluent gradient.



* Surrogate compounds UV @ 245 nm Standard chromatogram, 10 ppm each analyte.

ORDERING INFORMATION

Related Parts	Part Number
Oasis HLB Cartridge, 6 cc, 200 mg	WAT106202
SunFire C ₁₈ , 3.5 μm , 4.6 x 150 mm	186002554
Related Documents	Literature Code
Multi-Residue Analysis of Priority Pollutants in Drinking and Surface Waters Using Solid-Phase Extraction	720001438EN
Food and Environmental Residue Analysis	720002274EN
Environmental Applications Book	720002123EN

www.waters.com/library

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