



## Determination of Chlorinated Pesticides, Herbicides, and Organohalides by Liquid-Solid Extraction and Electron Capture Gas Chromatography\*

UCT Part Numbers:

**ECUNIC18 (1100mg C18, 83 mL cartridge)**

Or

**CEC181M6 (1000mg C18, 6 mL cartridge)**

**EPA Method 508.1** Rev 2.0

### Procedure

#### 1) Condition Cartridge

- a) Wash the cartridge with 5mL of ethyl acetate (EtOAc) and 5 ml of methylene chloride (MeCl<sub>2</sub>). Let the cartridge soak for 2 min, then drain dry under full vacuum for 1 min after each wash
- b) Add 10 mL of methanol (MeOH) to the cartridge then draw through to top of frit
- c) Rinse the cartridge with 10 mL of reagent water and draw through to top of frit

**Note:** Do not let the cartridge go dry after addition of methanol otherwise repeat at step b)

#### 2) Sample Extraction

- a) Samples must be dechlorinated and pH adjusted to <2
- b) Add 5 mL of methanol to the 1 liter sample and mix well
- c) Add 50 µL of surrogate compound to the water sample and mix well
- d) Draw the water sample through the cartridge at a fast drip
- e) Dry the cartridge by drawing air or N<sub>2</sub> through for about 10 minutes

#### 3) Extract Elution

- a) Insert an eluate collection tube in the vacuum manifold
- b) Rinse the inside walls of the sample bottle using 10 mL EtOAc then transfer solvent to the cartridge, and let soak for 2 min
- c) Collect dropwise, turn full vacuum on for 1 min
- d) Repeat step b) and c) with 10 mL of MeCl<sub>2</sub>

#### 4) Sample Drying

- a) Dry the eluents with 10-15 grams of anhydrous sodium sulfate held in either a glass wool stopped glass funnel or fritted empty cartridge, and collect in a new tube/vial
- b) Rinse the eluate collection tube with 2 x 5 mL portions of MeCl<sub>2</sub>, and apply the rinse to the sodium sulfate bed and collect
- c) Concentrate the extract to about 0.8 mL under a gentle stream of N<sub>2</sub> while in a water bath
- d) Rinse the inside walls of the concentrator tube three times with EtOAc during the evaporation
- e) Add internal standard (IS), and adjust the final volume to 1.0 mL
- f) Sample is ready for GC analysis

For complete details on Method 508.1 , rev 2.0 "Determination of Chlorinated Pesticides, Herbicides, and Organohalides by Liquid-Solid Extraction and Electron Capture Gas Chromatograph", the analyst is referred to: J. W. Eichelberger rev 1.0, 1994 and J. Munch, rev 2.0, 1995, Environmental Monitoring Systems Laboratory, Office of Research and Development, U.S. Environmental Protection Agency, Cincinnati, OH 45268