



Extraction of Bentazone and Acifluorfen from Solid Matrices Using C₁₈ SPE with GC/MS Analysis

Product Number: ECUNIC18 or EEC181M6

1. Sample Pretreatment

- Homogenize 5-10 grams of solid sample using 3-4 volumes of 5% aqueous methanol (CH₃OH)
- Centrifuge sample
- Transfer supernatant to appropriate sized sample bottles

Note: Adjust methanol to pH 2 using 0.1N HCl

2. Condition C₁₈ Cartridge

- Add 5 mL CH₃OH
- Add 15 mL DI H₂O adjusted to pH2 using 0.1N HCl

Note: Do not let the cartridge dry out otherwise repeat steps a) and b)

3. Extract Sample

- Adjust vacuum and draw water sample at 25 mL/ minute

4. Dry C₁₈ SPE

- Dry column for 10 minutes at full vacuum

5. Elute Bentazone/ Acifluorfen

- Prepare a clean test tube by adding 2g of acidified sodium sulfate*
- Add 10 mL of ethyl acetate to sample bottle and shake
- Add to C₁₈ cartridge
- Soak for 1 minute
- Adjust vacuum and collect eluate in the tube containing sodium sulfate
- Add 10 mL of methylene chloride (CH₂Cl₂) to the sample bottle and swirl
- Add to C₁₈ column
- Soak for 1 minute and collect
- Repeat using another 10 mL of aliquot of CH₂Cl₂
- Adjust vacuum and collect at 1-2 mL/ minute

6. Dry Eluate

- Pass extract through 10 g of acidified sodium sulfate
- Collect sample in a clean vial (Do not use soda lime glass)
- Add appropriate internal standard

7. Evaporate

- Concentrate to desired final volume

8. Derivatize sample

- Use trimethylsilyldiazomethane (TMSD) by EPA Method 515 or diazomethane by EPA Method 8151.

Note: The extract must be completely dry or incomplete methylation will occur.

9. Analysis

- Inject 1-2 µL onto a GC/MS

*See Procedure for Preparing Acidified Sodium Sulfate Anhydrous, UCT, Inc., Revision 1.1,
EPA Method 8151A, 5.10

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