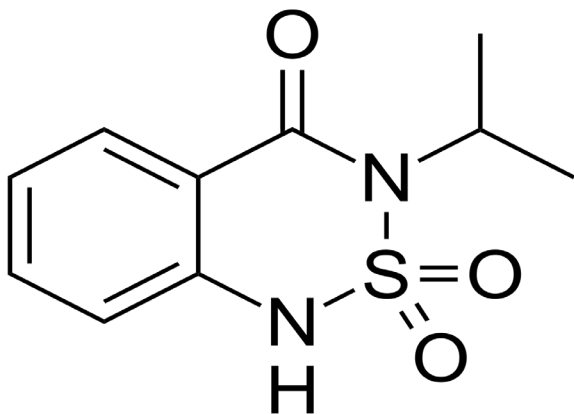


Extraction of Bentazone and Acifluorfen from Solid Matrices Using C18 SPE with GC/MS Analysis



UCT Part Numbers

ECUNIC18

Enviro-Clean® Universal C18
1100 mg/Universal Cartridge

Or

EEC181M6

Enviro-Clean® Universal C18
(Octadecyl) Endcapped -
1000 mg / 6 mL Cartridge

Procedure:

1. Sample Pretreatment

- Homogenize 5-10 grams of solid sample using 3-4 volumes of 5% aqueous methanol (CH_3OH).
- 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 CH_3OH .
- Add 15 mL DI H_2O 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 (CH_2Cl_2) to the sample bottle and swirl.
- Add to C18 column.
- Soak for 1 minute and collect.
- Repeat using another 10 mL of aliquot of CH_2Cl_2
- 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.

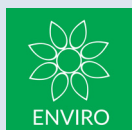
8. Derivatize Sample

- 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.



References:

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

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UCT, LLC • 2731 Bartram Road • Bristol, PA 19007 800.385.3153 • 215.781.9255

www.unitedchem.com Email: methods@unitedchem.com

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