Empore™

C8 (Octyl) or C18 (Octadecyl) Extraction Disks for Environmental Analysis

For use with 47 mm and 90 mm extraction apparatus

Instructions for Use

Note: Empore Sample Preparation Products are intended for solid phase extraction during scientific research only. These products are not intended for use in medical devices or in assessment and treatment of clinical patients.

General Product Characteristics

Description:
Empore C8 or C18 Disks are a unique product for the solid phase extraction of moderately to strongly non-polar analytes from aqueous samples. A proprietary process is used to entrap adsorbent particles into a matrix of inert PTFE to create a mechanically stable sorbent disk.

Formulation:
90% or greater adsorbent particle
10% or less PTFE

Product Characteristics:
Thickness: 0.5 mm ± 0.05 mm
SPE Flow Rate: < 10 min/L DI H₂O @ 25°C
@ 20 in. Hg (47 mm disk)
Solvents: Compatible with all organic solvents
pH: Stable between 2 and 12 under normal use
Suggested Application Procedures

General: Water Analysis

Empore™ Extraction Disks with C8 or C18 sorbent provide a rapid, efficient method for purification and concentration of samples prior to final analysis.

The enclosed instructions are general guidelines for use. Sample volume, solvent type, and conditioning may be changed to adapt to specific methods and analytes as needed and determined by user.

Extraction Equipment

- 47 mm or 90 mm Empore Extraction Disks.
- 47 mm or 90 mm glass filtration apparatus.
- Vacuum source.

Sample Preparation

- Empore Filter Aid 400 (Cat # FA400) and/or prefiltration may be helpful if the sample contains excessive suspended solids.
Note: Suggested solvent volumes will vary according to the disk diameter and the amount of Filter Aid 400 filter material. A general guide for solvent volumes is to completely cover the disk and bed of filter material, such that 2 - 3 mm of solvent is above the surface. Repeat with second aliquot.
Extraction Disk Conditioning

Disk conditioning is critical for a successful extraction. Conditioning provides a good interface between the sorbent and the sample matrix. FAILURE TO CONDITION THE EXTRACTION DISKS PROPERLY WILL RESULT IN ERRATIC AND LOW RECOVERIES.

1. Center the extraction disk on the base of the filtration apparatus and clamp the reservoir on top of the disk.*

2. Wash the disk with 10 mL of elution solvent.**

3. Apply vacuum to dry the disk.

4. Add 10 mL methanol to the disk. Apply vacuum and pull approximately 1 mL through the disk. Vent the vacuum and allow the disk to soak for 30 seconds.

5. Apply vacuum and draw methanol through the disk leaving a small amount of methanol on surface.

6. Add 10 mL of reagent: grade water to the reservoir, apply vacuum and draw the water through the disk until the water surface just covers the disk surface.

Note: When using solvents or other chemicals, be sure to read and follow the manufacturer’s precautions and directions for use.

If disk should become dry while conditioning with methanol or water, repeat steps 4 through 6.

* Place a vial in the vacuum apparatus to collect and dispose of wash and conditioning solvents. Remove vial prior to sample extraction.
Extraction Disk Conditioning (continued)

** Suggested solvent volumes used in the extraction method will vary according to the disk diameter and the amount of filter aid material. A general guideline for solvent volumes is to completely cover the disk and bed of filter aid such that the solvent just covers the surface.

Sample Extraction

- Pour the sample into the reservoir and apply vacuum to draw through the disk. Flow rate is dependent on vacuum setting and solids content of the sample. However, recoveries are not affected by flow rate.
- After sample extraction is complete, remove residual water from the disk by applying vacuum to dry the disk for approximately 5-20 minutes.

Sample Elution

Two elutions with 10 mL solvent are recommended.
- Place tip of filter base into the collection vessel (see diagram).
- Add 10 mL elution solvent to sample container carefully rinsing the sides. Transfer solvent from sample container to reservoir with a pipet washing the walls of the reservoir in the process.
- Apply vacuum and draw approximately 1 mL elution solvent through the disk. Vent the vacuum and allow the disk to soak for 30 seconds before reapplying vacuum to dry the disk.
Sample Elution (continued)

- Repeat this process with a second aliquot of eluting solvent.

General Information

Handling and Storage

The disks may be handled in the same manner as any filter membrane. Because of the adsorptive properties of the disk, desiccator storage away from laboratory air at room temperature is recommended.

Recommended Usage

Empore™ Extraction Disks are used in a manner similar to membrane filters. Filtration equipment is available from a number of different suppliers and include in-line filter holders, glass filtration apparatus, and multiple filtration manifolds. Buchner funnels are not recommended.

Applications

Empore Extraction Disks are used for extraction of semi- and non-volatile organic compounds from water samples or soil extracts.
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34-7054-5218-2
Artwork #: 34-7054-5218-2
Date: 05/7/08
Author: SCB
Supersedes: NA
Structure: ins

SCALE: ━━━━━━━━━ 1 Inch

All prints Black