



Section 3: Product Characteristics

Formulation:	90% adsorbent particle 10% PTFE
Thickness:	0.50 mm ± 0.05 mm
SPE Flow Rate:	<10 min/L DI H ₂ O @ 25 °C @ 20 in. Hg (47 mm disk)
Solvents:	Compatible with all organic solvents
pH:	Stable between 2 and 12. Range may be extended by short contact times.
Groups:	Sulphonic acid

Handling and Storage

Disks should be stored at room temperature in a desiccator due to the adsorptive properties of the disk.

Recommended Usage

Vacuum apparatus is available from a number of different suppliers and includes in-line filter holders and manifolds. Buchner funnels are not recommended.

Applications

CDS Empore™ Extraction Disks are used for extraction of semi- and non-volatile organic compounds from water samples or soil extracts.



Section 4: Customer Contact Information

Global Customer and Technical Service

Phone: 1-800-541-6593
Fax: 1-610-932-4158
Website: www.CDSAnalytical.com/Empore



WARNING: To reduce the risks associated with improper disposal and/or handling of contaminants in used plates: Take appropriate steps to assess the disposal required for any altered product or materials added to the product. (Alteration of the product or the addition of other materials to the product may require different disposal methods.)

Warranty Information

All statements, technical information and recommendations herein are based on tests CDS believes to be reliable, but the accuracy or completeness thereof is not guaranteed. CDS WARRANTS ONLY THAT CDS PRODUCTS WILL MEET CDS SPECIFICATIONS AT THE TIME OF SHIPMENT. THE FOREGOING WARRANTY IS MADE IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND FREEDOM FROM NON-INFRINGEMENT. CDS Empore™ Sample Preparation Products are intended for solid phase extraction during scientific research only. These products are not intended or warranted for use in medical devices or in assessment and treatment of clinical patients.

Limitations of Remedies:

If Products are proven not to meet CDS specifications, the sole and exclusive remedy available and CDS's only obligation shall be, at CDS's option, to replace such quantity of Products which are proven out of specification or to refund the purchase price paid for Product.

Limitations of Liabilities:

The remedies provided herein are exclusive remedies against CDS for any alleged or actual nonconformance to specifications or defect or other failure in products. Under no circumstances is CDS liable for any direct, indirect, incidental, special or consequential damages (including lost profits) in any way related to the product or supply of product under any theory of law including, but not limited to contract, negligence and strict liability.



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Empore™

Extraction Disks for Environmental Analysis
with Anion Exchange-SR for use with 47mm and
90 mm extraction apparatus

Instructions for Use

CDS Empore™ Extraction Disks provide an efficient alternative to liquid/liquid extraction for sample preparation. A CDS process is used to entrap adsorbent particles into a matrix of inert PTFE to create a mechanically stable sorbent disk. The disks can be used for purification and concentration of analytes for analysis. Advantages of Empore™ Extraction Disks include rapid filtration, reduced solvent usage, and a reduction of analytical interferences.

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.

Section:

1. Extraction Method with Anion Exchange-SR Disk
2. Empore Manifold System Setup
3. Product Characteristics
4. Customer Contact Information

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Section 1: Extraction Method with Anion Exchange-SR Disk

Step A: Sample Preparation

- Adjust sample pH as necessary to ensure that analytes are ionic. A general rule of thumb is to raise sample pH at least two units above the pKa of the analytes being extracted.
- Dilute sample with water as needed to reduce ionic strength to <0.1M
- CDS Filter Aid-400 and/or prefiltration may be helpful if the sample contains excessive suspended solids.

Step B: 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.

- Center the extraction disk on the base of the filtration apparatus and clamp the reservoir on the top of the disk.*
- Wash the disk with 10 mL of acetone or other solvent. Apply vacuum and dry the disk.**
- 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 before reapplying vacuum. Pull the methanol through the disk until it is just above the surface of the extraction disk. This step should be followed by the following sequence of solvents in 10 mL aliquots: Reagent water, 1M Sodium Hydroxide, Reagent Water.

- The conditioning solutions can be pulled through the extraction disk at full vacuum. DO NOT ALLOW THE DISK TO DRY. Always leave 3-5 mm of liquid above the surface of the disk. If disk becomes dry while conditioning with the above solutions, repeat Step 3.

*Place a vial in the vacuum apparatus to collect and dispose of wash and conditioning solvents. Remove vial prior to sample extraction.

**Suggested solvent volumes used in the extraction method will vary according to the disk diameter and the amount of filter aid materials.

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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. Repeat with the second aliquot.

Step C: Sample Extraction

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

Step D: Sample Elution

Two elutions with 10 mL solvent are recommended. Smaller volumes of solvent may be used if the elution technique has been optimized. Elution can be enhanced by the selection of a high selectivity counter-ion, high ionic strength solution and a pH adjustment to 2 units lower than the pKa of the analytes being extracted. Very strong acids such as sulfonates may be difficult to elute from anion exchange disks.

- Place the tip of filter base into the collection vessel (see diagram).
- Add 10 mL elution solvent to sample container, rinsing down the sides. Transfer solvent from sample container to reservoir with a pipet washing the walls of the reservoir in the process.***
- Apply vacuum and pull approximately 1 mL elution solvent through the disk. Vent the vacuum and allow the disk to soak 30 seconds before reapplying vacuum to dry the disk.
- Repeat this process with a second aliquot of eluting solvent.

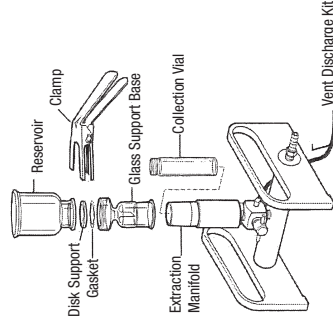
*** An intermediate wash with methanol or another organic solvent will remove neutral organics. Recovery will not be reduced by this step. If all liquid has left the surface of the disk, re-wetting with a minimum amount of methanol will be necessary.

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Section 2: CDS Empore™ Manifold System Setup

CDS Part #201-47 and 201-90



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