

# Application Pak Point-Of-Use Polishers

Get the best-adapted media for your research



Safe • Versatile • Easy to use

## A range of Application Paks to fit your needs

Application Paks are specially designed point-of-use purifiers from EMD Millipore. When placed at the outlet of a Q-POD® ultrapure water dispenser (or connected to the outlet of a Type 1 water purification system\*), Application Pak point-of-use purifiers remove contaminants that are critical for your application — just before water is delivered from the dispenser.

For the user, the benefits of the Application Pak purification strategy are multiple:

- Safety: the risk of recontamination inside the system is eliminated.
- Versatility: the water purification system can be adapted easily—simply by changing the Application Pak.
- Ease of use: the only maintenance needed is to replace the Application Pak when required by the system.

### Millipak® Express 40 filter

A safe and efficient barrier against particulates and bacteria

The Millipak® Express 40 filter is designed for applications requiring the removal of particulates and bacteria (e.g., the preparation of solutions used in spectrophotometry, pH measurement, titrations, atomic absorption, Kjeldahl analysis, HPLC or ILC). The unit is designed with a 0.22 µm PES sterilizing membrane filter heat-sealed on a SAN housing. The membrane's conical pores allow high flow rate at low differential pressure; the membrane, housing material, and production processes have been selected to minimize organic and inorganic extractable release.

### Millipak® Express filter benefits

- Manufactured in an ISO® 9001, cGMP-compliant plant.
- Each Millipak® filter is individually tested and delivered with a Certificate of Quality.
- Provides a warranty of efficient bacteria removal (bacteria < 0.1 cfu/mL in the filtrate following a 100 mL morning flush); the membrane meets the HIMA standards of LRV > 7.
- Validation was performed to verify that the Millipak® filter does not add significant organic or inorganic contaminants to the ultrapure water flowing through it.
- Ease of maintenance: the filter is easily fitted and replaced.



### BioPak® ultrafiltration polisher

For pyrogen-free and nuclease-free water

Designed for applications such as molecular biology, biochemistry, and cell culture, the BioPak® ultrafiltration (UF) cartridge removes macromolecules and larger biological structures such as viruses and bacteria. The device is made of polysulfone ultrafiltration hollow fibers in an ABS housing. It is validated for the removal of pyrogens, RNases, DNases and bacteria. A Validation Guide is available upon request.

The BioPak® ultrafiltration polisher provides a convenient and economical solution for scientists who need ultrapure water for cell culture, biochemistry or molecular biology applications.

### BioPak® polisher benefits

- Manufactured in an ISO® 9001-compliant plant.
- Each BioPak® unit is delivered with a Certificate of Quality.
- Validated to warrant pyrogen-free (< 0.001 EU/mL), RNase-free (< 0.01 ng/mL), DNase-free (< 4 pg/µL), protease-free and bacteria-free water (< 0.1 cfu/mL).
- Eliminates the need for DEPC, therefore saving time, reducing costs, and removing risks.
- Ease of maintenance: the filter is easily fitted and replaced; does not require sanitization.
- Does not require a water flush — a step required for system-integrated UF cartridges. This eliminates the need for a drain and for sanitization, and also saves on ultrapure water and ion-exchange consumable use.



\*Milli-Q®, Direct-Q®, Synergy®, and Simplicity® systems

### LC-Pak™ polisher

#### Water for ultra trace organic analysis

Designed for applications such as ultra trace organic analysis by HPLC, UPLC, LC-MS, and LC-MS/MS, the LC-Pak™ is a device made of C18 reversed phase porous granular silica material in a polypropylene housing. It is validated to achieve the water quality suitable for ultra trace analysis. A Validation Guide is available upon request.

#### LC-Pak™ polisher benefits

- Manufactured in an ISO® 9001-compliant plant.
- Each LC-Pak™ unit is delivered with a Certificate of Quality.
- Provides a warranty of water passing the following tests: HPLC gradient test at 210 and 254 nm; UV absorbance within specifications at 200 nm, 205 nm, 210 nm, and 254 nm; fluorescence as quinine < 1 ppb at 254 and 365 nm; reserpine test; residue after evaporation < 0.0001% w/w as described in ISO® 3696.
- Costs a fraction of bottled water for GC-MS and also saves storage space: one LC-Pak™ is equivalent to 500 bottles of 1L.
- Ease of maintenance: the polisher is easily fitted and replaced.



### VOC-Pak™ polisher

#### Water for analysis of Volatile Organic Compounds

Designed for the production of ultrapure water suitable for the analysis of Volatile Organic Compounds (VOCs) in water by GC and GC-MS. The VOC-Pak™ is a device made of specific activated carbon material in a polypropylene housing. It is validated to deliver water whose level of 29 commonly analyzed VOCs is below the analytical method quantification limit. A Validation Guide is available upon request.

The VOC-Pak™ polisher provides an efficient solution for scientists who need volatile organic compounds-free ultrapure water for their laboratory work.

#### VOC-Pak™ polisher benefits

- Manufactured in an ISO® 9001-compliant plant, using a specific activated carbon selected after years of research for specific and fast adsorption of VOCs.
- Each VOC-Pak™ unit is delivered with a Certificate of Quality.
- Provides a warranty of water suitable for VOC analysis: blanks and standards preparation; glassware cleaning; and sample dissolution (if VOCs are analyzed in a matrix other than water – i.e., in soil).
- Ease of maintenance: the polisher is easily fitted and replaced.



### EDS-Pak® polisher

#### Water for endocrine disrupter experiments

Designed for the production of endocrine disrupter-free ultrapure water suitable for research, the EDS-Pak® is a device made of a specific activated carbon material in a polypropylene housing. It is validated to deliver water with a low level of endocrine disrupters, including bisphenol-A, diethyl phthalate, di-n-butyl phthalate or nonylphenol. A Validation Guide is available upon request.

The EDS-Pak® polisher provides scientists working in research or QC with a convenient solution for their endocrine-disrupter-free ultrapure water needs.

#### EDS-Pak® polisher benefits

- Manufactured in an ISO® 9001-compliant plant; the activated carbon used in the EDS-Pak® was selected for its specific and fast adsorption of endocrine disrupters.
- Each EDS-Pak® unit is delivered with a Certificate of Quality.
- Provides a warranty of water suitable for EDS research (analytical methods and biological tests).
- Ease of maintenance: the polisher is easily fitted and replaced.





#### BioPak® Polisher

Pyrogen-free and  
nuclease-free water

Catalogue N°:  
CDUFB1001



#### VOC-Pak™ Polisher

Water for volatile  
organic compounds  
analysis

Catalogue N°:  
VOCPAK001



#### EDS-Pak® Polisher

Water for endocrine  
disruptors  
experiments

Catalogue N°:  
EDSPAK001



#### LC-Pak™ Polisher

Water for ultratrace  
organic analysis

Catalogue N°:  
LCPAK0001



#### Millipak® Polisher

Bacteria-free and  
particulate-free  
water

Catalogue N°:  
MPGPO4001



Millipore, Q-POD, Millipak, BioPak, EDS-Pak, Milli-Q, Direct-Q, Synergy, and Simplicity are registered trademarks of Merck KGaA, Darmstadt, Germany. The M mark, EMD Millipore, VOC-Pak, and LC-Pak are trademarks of Merck KGaA. ISO is a trademark of the International Organization for Standardization.

© Copyright 2013 EMD Millipore Corporation, Billerica, MA 01821, U.S.A. All rights reserved.  
Lit. No. DS1100EN00