MICROSOLV
TECHNOLOGY CORPORATION

White Paper

Extractables and Retention Volume Study of Microsolv AQ™ Brand NDX™ - Depth Filters

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Extractable and Retention Volume Study of MicroSolv AQ™ Brand NDX™ - Depth Filters

The concentration of extractables can be greatly reduced by two strategies:

First, common practice is to discard the first milliliter or so of filtrate, which contains the highest level of extractables.

Second, selection of a high quality filter will further reduce the effect. In this study, we investigate the significance of both effects.

Extractables are compounds which come from your HPLC syringe filter membrane and end up in the filtrate (i.e. the sample). These extractables can present problems in HPLC analyses where they may co-elute and interfere with compounds of interest.

The MicroSolv AQ™ Brand NDX™ - Depth 0.45µm nylon Filters were compared to those from a different market leading manufacturer. A solvent of 70:30 acetonitrile: DI water was passed through each filter. In one instance, the filtrate was sent directly into an autosampler vial (**Figure 1, "No Wash"**). In another, the first 1mL was sent to waste and then the rest was collected in an autosampler vial (**Figure 1, "Wash"**). All four vials were used in HPLC studies to determine whether extractable peaks were present. The peak areas of the observed extractables are shown in Figure 1.

The AQ™ filters yield substantially lower extractables than competitive filters, hence minimizing potential interferences in your HPLC analyses. Further studies demonstrate additional advantages of the MicroSolv AQ Brand NDX - Depth Filters.

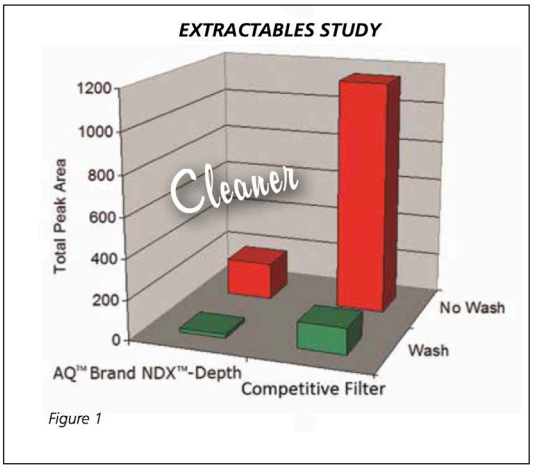

Figure 1

Get Better Results.

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Retention volume can become important in expensive or scarce samples when you want to minimize sample waste. As shown in **Figure 2**, the AQ™ Filters have much less liquid remaining in the filter compared to an ordinary filter.

Retention Volume or holdup volume is the amount of liquid remaining in the lter after passing all the liquid through.

Lastly, the filters have a significant lifetime. To test this, a "dirty" solution was filtered until the pressure became too high. The volume at which this occurs was recorded for each filter type, shown in **Figure 3**.

The advantages of these filters are apparent in terms of both extractable content and retention volume. As such, they would be a valuable benefit to any laboratory that deals with HPLC or dissolution analyses and needs high throughput.

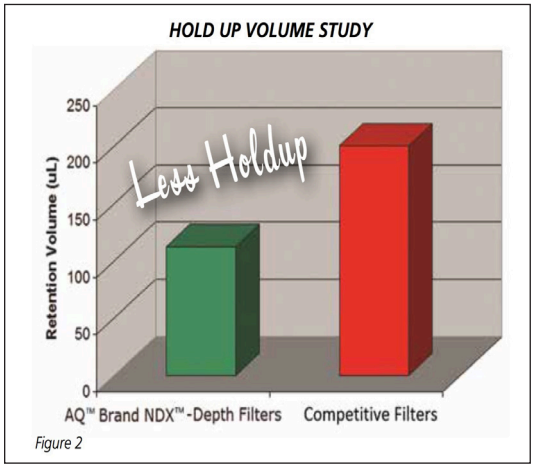

Figure 2

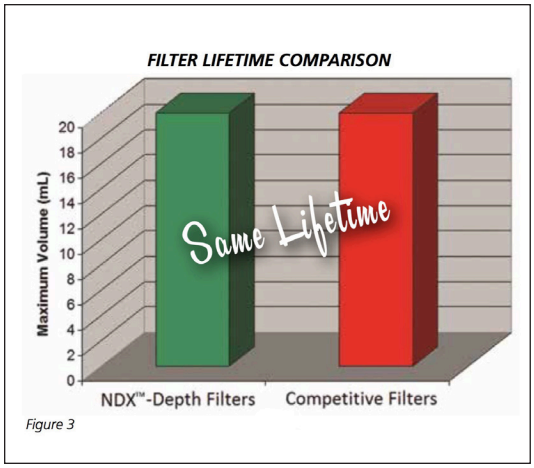

Figure 3

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NDX™ - Depth Filters

AQ™ Brand Advanced Quality Brand

Cat. No.	Description
58045-NDX-100	Certified HPLC Syringe Type Multi-Depth Filters 25mm PP Housing with 0.45µm Nylon Membrane Color Code: Black w/White Lettering. Good for viscous or highly particulated solutions. Excellent for Environmental and Pharmaceutical labs. 100/pk.
58045-NDX-CASE	Certified HPLC Syringe Type Multi-Depth Filters 25mm PP Housing with 0.45µm Nylon Membrane Color Code: Black w/White Lettering. Good for viscous or highly particulated solutions. Excellent for Environmental and Pharmaceutical labs. 1000/case.

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