

# Extractables and Retention Volume Study

AQ™ Brand NDX™ Depth Syringe Filters

A White Paper

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

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

**First**, common practice is to discard the first 2 milliliters or so of filtrate, which contains the highest level of extractables.

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

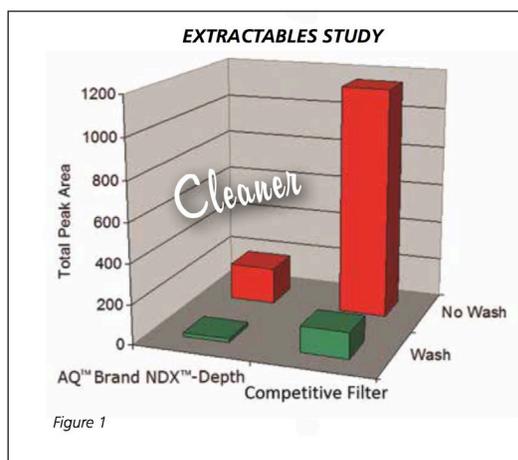
The AQ™ Brand NDX™ - Depth, 0.45µm, nylon syringe filters were compared to those from a different, market leading manufacturer. A solvent of 70:30 acetonitrile: DI water was passed through each filter from each manufacturer.

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

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.

Get Better Results



Retention Volume or Holdup Volume is the amount of liquid remaining in the filter after passing all the liquid through it.

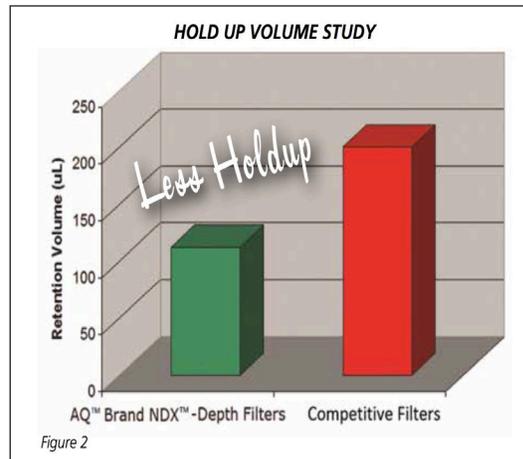
**Retention volume** can become important when working with expensive or scarce samples when you want to minimize sample waste. As shown in **Figure 2**, the AQ™ syringe filters have much less liquid remaining in the filter compared to a competitive filter.

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

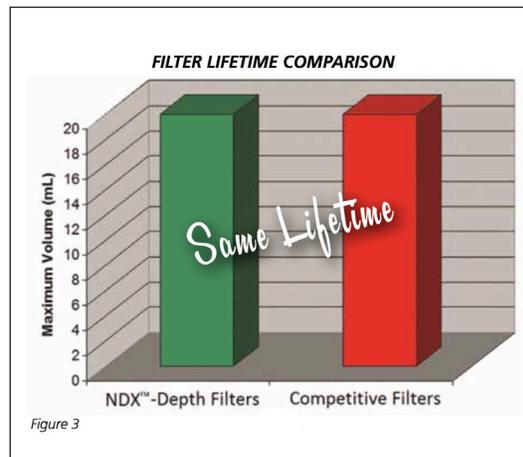
**Conclusion:**

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.

LESS HOLD UP



LONG LIFETIME





### NDX™ - Depth Filters

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