

Multi-Density Filter Disk



Cross section of the new IW Tremont Multi-Density Filter Disk

Introducing the IW Tremont Multi-Density filter disk. This exciting new product is a 100% borosilicate binderless glass microfiber filter which demonstrates several layers of density along with a unique surface formation that speeds and optimizes filtration. These filter disks can handle sample preparation tasks typically considered too challenging for other analytical filter products. This unique product bridges the gap between macro and micro analytical filtration.

Using a newly developed production method Tremont produces this filter with a final retention stage selection of $<0.5\mu\text{m}$ to $2.7\mu\text{m}$ (the same as Tremont's binderless glass microfiber line of products). The unique filter has a robust prefilter built-in which captures particulate from $>300\mu\text{m}$ and binds typically difficult to filter substances without clogging such as:

- Lipids (natural oils and waxes)
- Petrochemical oils, tars
- Cellular matter
- Proteins
- Irregularly granular matter
- Viscous suspensions and slurries

The filter has been optimized to meet the extreme demands of high fluidic volume:

- Manifold vacuum filtration
- Short path extraction methods
- Positive pressure devices
- Structured devices such as inline filters & capsules



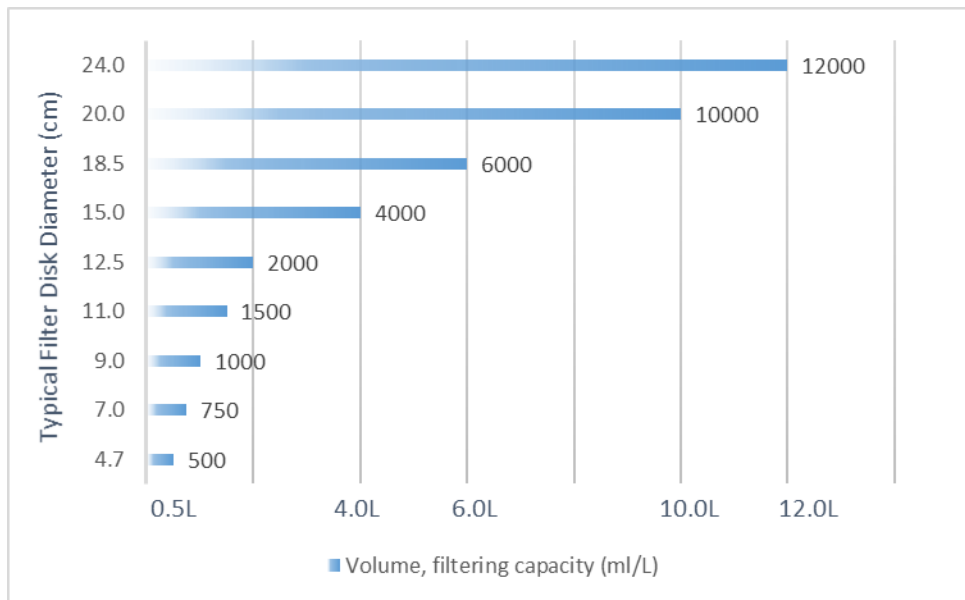
The flow and drainage rate is exceptionally rapid via its highly irregular surface formation which has high and low points that aid in the reduction of surface loading.

The unique fibers which sit on the outermost surface of the pre-filter side are designed to extend up and add further prefiltration structure similarly to glass floss. In standing solutions the prefilter side resists compaction causing surface plugging found in other common filter configurations.

The filter is free of binders, glues and resins which ensure a higher purity filtrate. These filters demonstrate very low extractables. This filter replaces multi pre-filtration stage products In applications where a series of prefilters are used to prepare sample prior to membrane filtration, saving time and reducing variability in extract signature upon analysis methods.

The borosilicate glass is highly resistive to aggressive solvents, acids* and base with a usable range of 0-14pH and a wide effective temperature range of -200 to 500 °C. **

The final filtration stage is available in the same porosity range of IW Tremont’s binderless glass line, including the newly introduced Grade A-83 Nano-Scale filter.



Fluidic volume capacity to diameter relationship example...food sciences: (H₂O + 20% tomato paste solution homogenized, 1.5 µm final retention, 2-3bar vacuum, 15 °c)

Final Filtration Particle Retention Selection (µm)

- <0.50
- 0.70
- 1.00
- 1.20
- 1.50
- 1.60
- 2.70

- Available in diameters up to 30cm as part of standard offering.
- Custom OEM configurations and fiber formulations available.

The unique irregular and highly tortuous prefilter surface enables rapid drainage rates and reduces surface plugging.



*Borosilicate glass microfiber filters are not compatible with hydrofluoric acid.
 **Borosilicate glass microfiber filters may become more brittle and susceptible to cracking at <-100°C.