

APPLICATION NOTE, APPN-02

Technology: Porometry
Subject: Micro-porous Membranes
Issue: Rev A.

This is the one of the classic applications for Porometry, the method of displacing a wetting fluid from a porous sample by applying an increasing gas pressure to one side. Please see APP-01 for more explanation of this method used for analyzing Pore Size. Micron sized membranes are used for filtration and many other applications. This application note gives data for three different cellulose membranes. Interestingly the differences between these three membranes are perhaps typical of those found within one batch of the same material, due to differences often found within the web and length of one membrane manufacturing run.

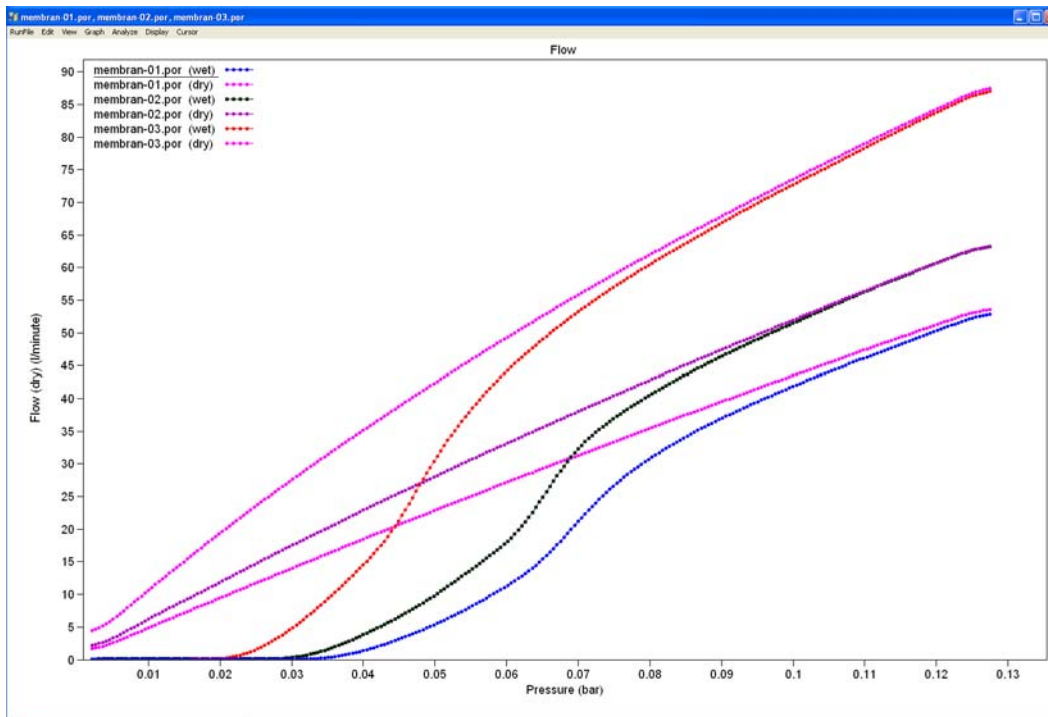


Fig. 1 Run Data for Three Membranes

The run data for the three Membranes are shown above in Fig. 1. The s-curve data sets are the "wet data" and the "linear" ones the "dry data". The dry data is required for calculation of the Mean Flow Pore Size, Minimum Pore Size and Pore Distribution Data.

The Pore Flow % Size Distribution Data for these samples is shown in Figs. 2, 3 and 4. The summary pore size data follows the graphs.

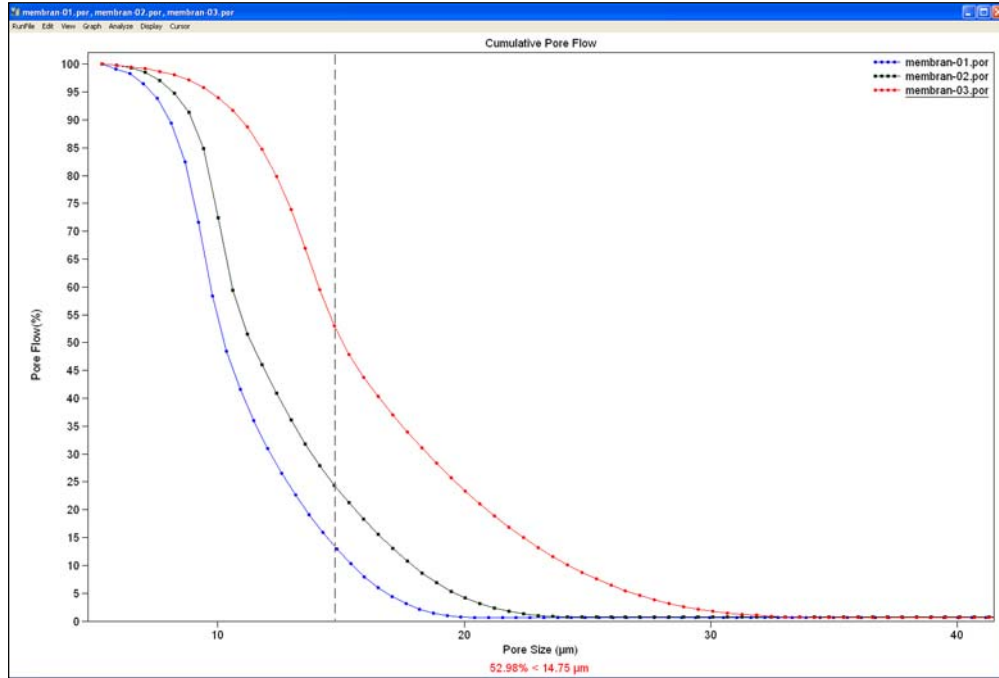


Fig. 2 Cumulative Pore Flow Size Distributions

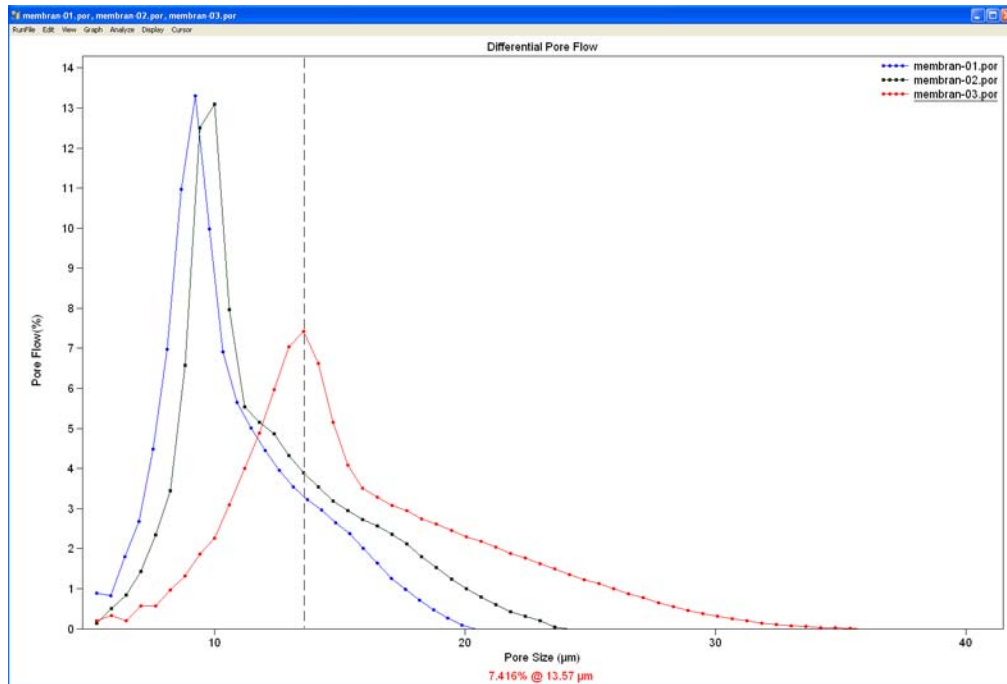


Fig. 3 Differential Pore Flow % Size Distributions

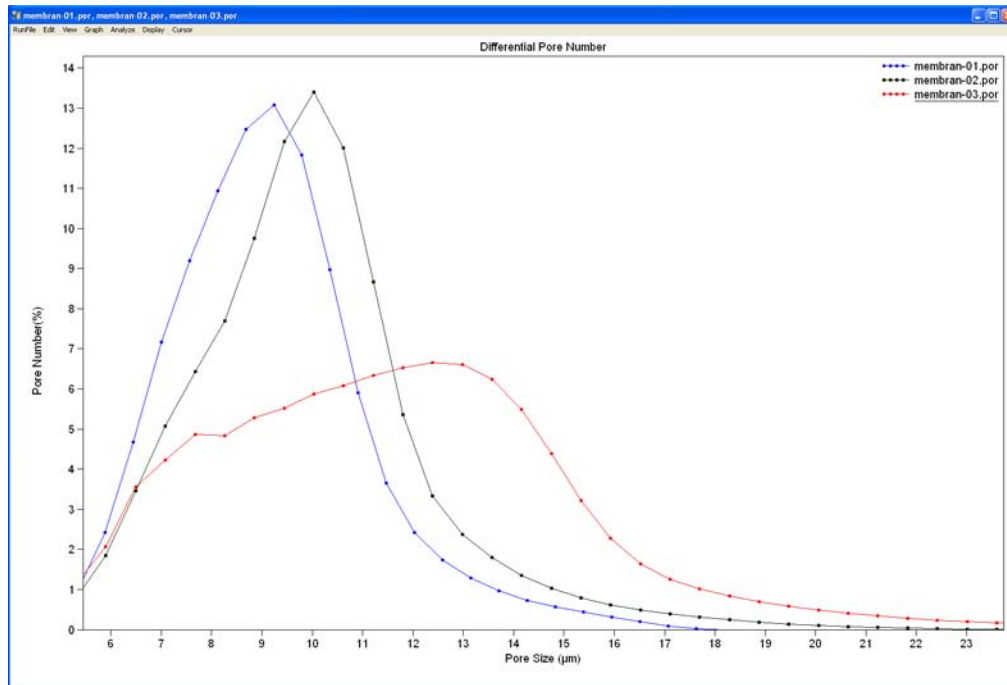


Fig 4. Differential Pore Number % Size Distributions

SUMMARY DATA

| | Membrane 1 | Membrane 2 | Membrane 3 |
|--------------------------|------------|------------|------------|
| Mean Flow Pore Size (µm) | 9.52 | 10.90 | 14.50 |
| Maximum Pore Size (µm) | 16.60 | 23.90 | 28.1 |