

Intelligent

- An experimental data view is user selectable in addition to traditional advanced or basic views. Simply opening a data file gives the user direct access to their data. It is not necessary to generate reports to view results. Rapidly switch between the traditional view and the new graphical view.

Intuitive

- Screen layout has been designed to provide a user-friendly interface. Many gas adsorption models are included - all using the isotherm data.

Interactive

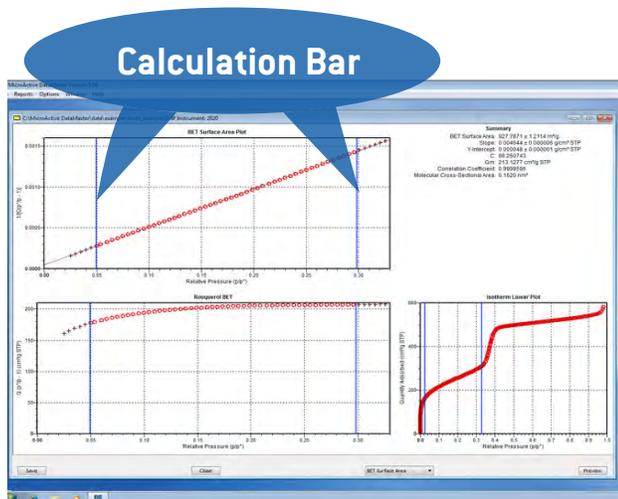
- Interaction with adsorption data is direct. By simply moving the calculation bars, the user is immediately updated with the new textural properties. One-click access to important parameters allows the user to focus on the result rather than the parameters.
- Interactive data manipulation minimizes the use of dialog boxes and tunneling of dialogs to specify calculation parameters. This allows the user to accurately and efficiently determine surface area and porosity of their materials.
- Eliminates multiple, manual trial runs to determine optimal fit of the NLDFT model to experimental data for roughness and residual error correction – immediately update results information.

Micromeritics' innovative MicroActive software allows users to interactively evaluate isotherm data from Micromeritics ASAP, TriStar, and Gemini gas adsorption instruments. Users can easily include or exclude data, fitting the desired range of experimentally acquired data points using interactive, movable calculation bars. Isotherms can be viewed on either a linear or logarithmic scale and available to the user under each calculation model. No need to generate reports to review results – now see it graphically and interactively on screen.

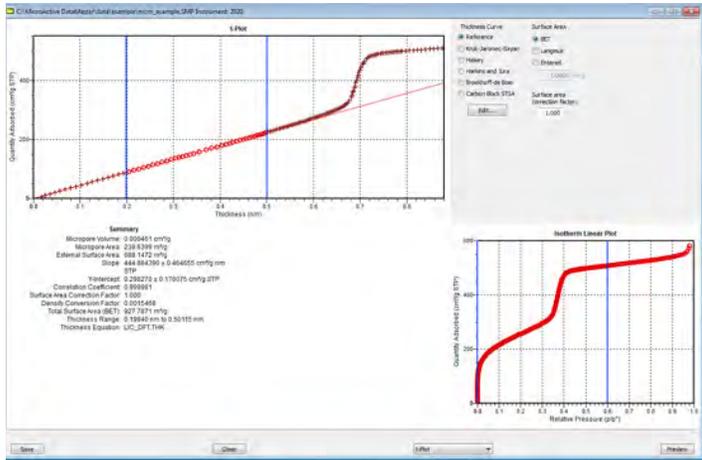
MicroActive Reports

Isotherm – Displayed in two graphic panes with the linear isotherm in one pane and the log of the isotherm in a separate pane. Total pore volume may be calculated by sliding the calculation bar to the desired region of the isotherm.

BET surface area – The graphical isotherm allows the user to specify the data used in the BET model by simply sliding the calculation bars to define the range. The graphical BET transform allows the user to obtain the best fit for the transform data. You can view a broad range of the BET model and quickly select the best range for calculating surface area. A second significant advantage is the use of the Rouquerol transform to quickly and easily find a region to calculate the BET area for microporous materials.



Interactive BET surface area allows the rapid and accurate determination of surface area.



MicroActive interactive features reduce the often difficult trial and error procedure for fitting the t-plot by providing direct feedback to the user.

BJH adsorption and desorption

Change either the thickness curve or the various corrections available for the BJH model to immediately update the pore volume and area distributions. The user can view pore volume, pore volume distribution, cumulative pore area, and pore area distribution in an easy to interpret format.

Horvath-Kawazoe report

Comparable to the BJH view, this report also uses the graphical isotherm to specify the calculation range. Simple to use, interaction parameters or calculated interaction parameters can be specified for rapidly determining the pore size distribution of microporous materials.

DFT pore size report

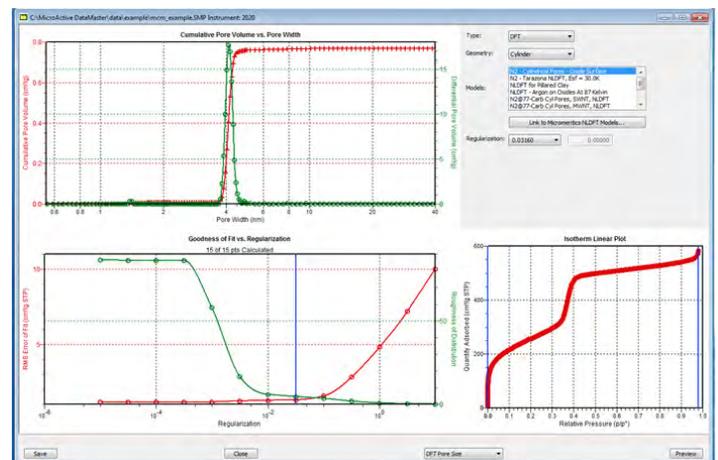
Regularization is a process that is used to reduce the fluctuations or noise associated with determining the pore size distribution from model isotherms (deconvolution). Residual error is the difference between the measured isotherm and the fitted isotherm for the DFT model. A noisy distribution may be described by a roughness parameter. With MicroActive software, both roughness and residual error are plotted as a function of the regularization parameter. The tedious trial and error approach to pore size characterization is eliminated by introducing easy to use and accurate statistics for determining the best fit of the NLDFT model to the experimental isotherm.

Dubinin

The Dubinin calculation has traditionally been difficult to use as the calculations are presented in reverse order to other more familiar gas adsorption models. MicroActive allows the user to select all of the isotherm data and then simply restrict the calculation to the optimal range via the calculation bars. This saves a significant amount of time and provides immediate feedback on the impact of using different ranges for the calculation.

Langmuir surface area – The Langmuir model has the same functionality as the BET model. This view uses the graphical isotherm to specify the range of data used in the linear Langmuir transform. The Langmuir plot then allows users to change the range to calculate the desired Langmuir area and constant.

t-plot – The graphical isotherm defines the range of data sent to the thickness plot. The linear region of the thickness plot may then be used to calculate external surface area and pore volume. Not only can the t-plot be manipulated very quickly, but this new view allows direct control over the fitted thickness range.



The NLDFT deconvolution now includes the roughness and error diagnostic plots to determine the appropriate level of regularization and best presentation of the pore size distribution.