

## ASWin Software

### Windows®-based Performance

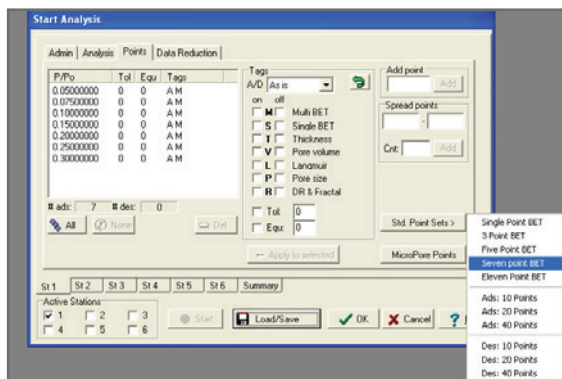
The Autosorb® 6iSA™ analyzer is microprocessor controlled, and communicates with a Windows® based PC utilizing Quantachrome's state-of-the-art, data acquisition and data reduction software.

### Comprehensive software to meet modern needs

The Autosorb® software is highly functional and user friendly. It function incorporates an advanced database that allows users to quickly search accumulated data files by specific ID, description, operator, comment or range of dates.

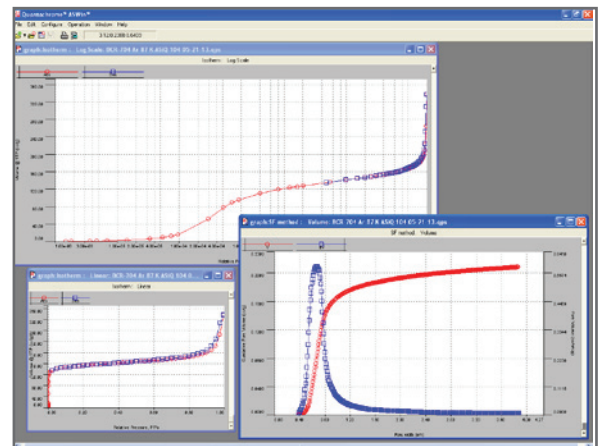
The Autosorb® software is superior for data reduction, incorporating classical methods and the latest DFT (Density Functional Theory) and Monte Carlo models.

The user-friendly software guides you through analysis setup, preprogrammed parameter recall or making settings for operations, data reduction, graphs and report printouts.



► Analysis parameters in Autosorb software

During operation one can view the accumulated data, the isotherm and all associated graphs and analytical results up to that point. After a run, reports and graphs can be archived across local network and/or printed automatically or the operator can use the software to determine the best fitting method, to compare data by overlaying curves or to adjust graph, size, scaling, titles, plot markers and line colors for best print out.

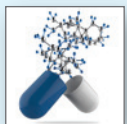
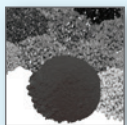
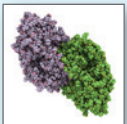


► Multiple graphs to view isotherm and related plots.

### Data Presentation

A comprehensive range of surface area and pore size methods is available:

- Adsorption and desorption isotherms.
- Multi and single point BET surface area (including constant and correlation coefficient). Micropore BET assistant uses ISO 9277:2010 method
- Langmuir surface area.
- Mesopore volume and area distribution (BJH and DH methods).
- Standard micropore size distribution - (MP method) and t-method by deBoer, Halsey or carbon black STSA.
- Total pore volume, average pore size and sample density.
- Dubinin-Radushkevich, micropore surface area.
- Horvath-Kawazoe, Dubinin-Astakhov and Saito-Foley micropore distribution.
- Full Density Functional Theory library for unified micro- and mesopore analysis using N<sub>2</sub>, Ar and CO<sub>2</sub> on materials such as zeolites, MCM-41, carbons and silicas.
- Monte Carlo based pore size model.
- Fractal dimension by FHH or Neimark - Kiselev models.



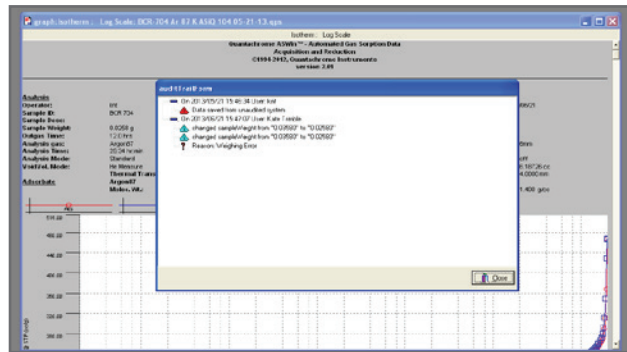
## 21 CFR Part 11 Software

Includes many features that support these regulations and provide the necessary tools for customer compliance.

### ASWin-CFR Software

Functions Relating to System Access, Electronic Signatures and Security.

- Required login with unique user i.d./ full name combination.
- Password aging and forced change.
- Automatic user account expiration and / or manual suspension.
- Selectable minimum i.d. and password length.
- Three user levels gives three privilege levels.
- Access level programmable by administrator level.
- Programmable session time-out (auto log-off through inactivity).
- Tamper resistant binary-encoded data files.
- Data security is established through the closed Autosorb® / ASWin system.
- Data reduction parameters (metadata) used to calculate final results are included as part of the data file.
- "Operator" user level does not have the access privileges to change meta-data.
- Changes to meta-data are reflected in the audit trail.
- Data files acquired by means other than directly from the Autosorb® instrument are flagged as such in the audit trail.



► CFRb Software- Audit Trail.

### 21 CFR Part 11

The Autosorb® 6iSA™, when configured for security and used with its 21 CFR Part 11 version of ASWin software, is designed to allow the user to meet the regulatory requirements for electronic records within the pharmaceutical and allied industries as set forth by the US Food and Drug Administration (FDA). The FDA intends to enforce Part 11\* compliance under FDA Regulations, the Federal Food, Drug, and Cosmetic Act and the Public Health Service Act as outlined in its 2003 Guidance for Industry "Part 11, Electronic Records; Electronic Signatures — Scope and Application" prepared by the Office of Compliance in the Center for Drug Evaluation and Research (CDER). This version of the Autosorb® 6iSA™ software adopts software design features to allow for easy integration into pharmaceutical and other GLP laboratories.

\* Final Rule, Federal Register / Vol. 62, No. 54, pp13429-13466, 1997

### Audit Trail Functions & Reporting Features

The audit trail does not obscure previous entries; old and new values are both recorded and visible. The audit trail itself cannot be edited and is included as part of the securely encoded data file it cannot become disconnected. Changes to meta-data require that the user enter a reason, to be in accordance with the underlying predicate record rules, which is then retained as part of the audit trail. The audit trail is included in all human readable formats, screen display, print preview, PDF and hard copy formats. Multiple page report sets are linked by a unique report i.d. generated automatically by ASWin.

