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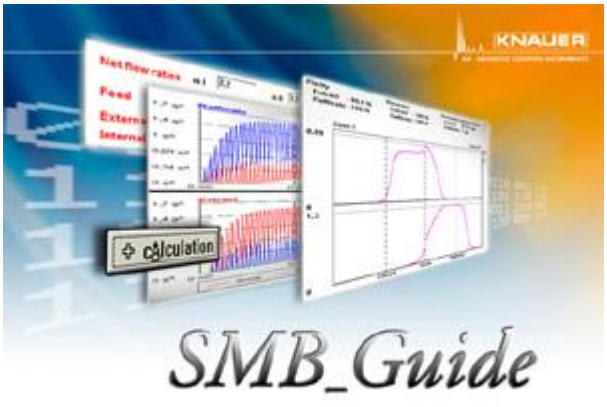
Simulation Software for SMB and Preparative HPLC

Overview

SMB Guide for Windows

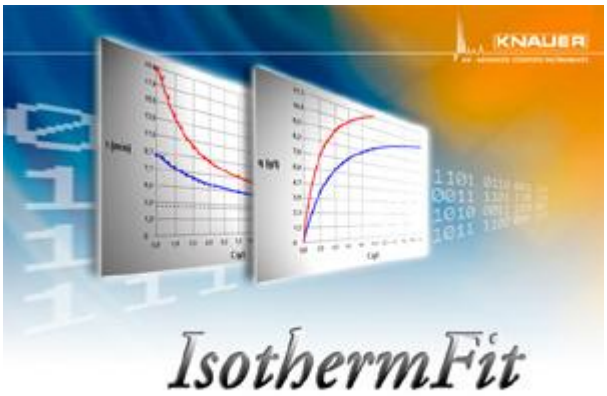


With the SMB-Guide simulation software, it is possible to simulate and optimize an isocratic separation and SMB process on a PC within a very short time. The calculations utilise the rapid and establishlished algorithms from Prof. Guiochon (University of Tennessee, USA) and Prof. 5eidel-Morgenstern (Max-Planck-Institute for dynamically complex technical systems, Germany). They make the normally long and empirical series of necessary tests finally a thing of the past.

The SMB-Guide helps you to thoroughly understand the internal processes of an SMB system. This is due to the clear representation of the internal and external concentration profiles in the software. It is only necessary to specify the system configuration and the feed current, the SMB-Guide will calculate all the process parameters that need to be set. You can then analyze the desired configurations in terms of the number of columns, the dimensions and also the distribution in the various SMB separation zones.

The optional eluent recycling or a solid regeneration are extra features, which add further flexibility to the SMB-Guide software. The SMB-Guide will help you to get your SMB system up and running in the shortest possible time.

IsothermFit for Windows



Since knowledge of the thermodynamic functions is the most essential prerequisite for optimizing preparative separations, the determination of non-linear adsorption isotherms in high concentration ranges has been simplified with IsothermFit.

The software is able to apply different measurement methods (e.g. ECP, perturbation method) and evaluates the parameters of various single and competitive isotherm equations using non-linear regression methods. The competitive behavior is described by extensions of the Langmuir equation such as linear isotherm, Langmuir isotherm and bi-Langmuir isotherm or by the theory of the ideal adsorbed solution (IAS).

IsothermFit supports the following four most suitable methods:

- Linear Isotherm Method (Retention Time Method)
- Adsorption Desorption Method (ADM)
- Elution by a Characteristic Point Method (ECP)
- Minor Disturbance Method (MDM, Perturbation Method)

The results are essential input parameters for the simulation of elution profiles, recycling chromatography, and for setting up SMB processes, which can be simulated using the powerful ChromSim and SMB Guide software.

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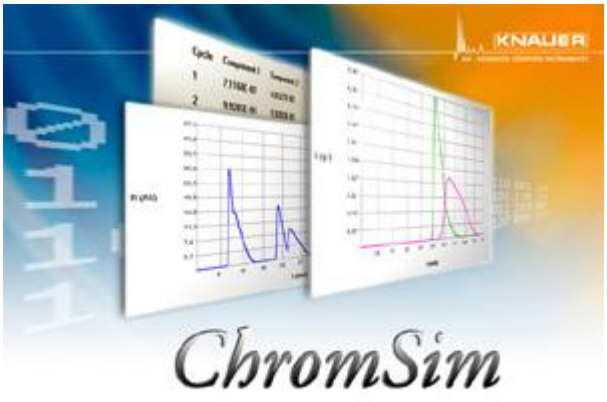
ChromSim for Windows
Over several years a detailed theoretical analysis of non-linear and preparative chromatography has been performed by well known scientists such as Prof. Guiochon and his numerous co-workers. The presented theory has made the calculation of concentration dependence of migration velocities in chromatographic columns possible.



ChromSim reduces the experimental work generally required to find optimal conditions such as flow rates or the correct injection amount. The powerful ChromSim software

- reveals the consequences if chromatographic columns are overloaded
- simulates how peak profiles and separation performance are affected if relevant parameters have been altered
- implements various peak recycling modes with and without peak-sharing
- calculates the cut times for fraction collection systems with respect to the predefined purity requirements
- evaluates and compares the standard elution mode with other modes such as frontal chromatography

Ordering Information

A2865	SMB Guide for Windows, software for simulation and optimization of SMB separations
A2866	ChromSim Software for simulation of peak recycling and fraction collection
A2867	IsothermFit Evaluation Software for determining non-linear adsorption isotherms when working at high concentrations