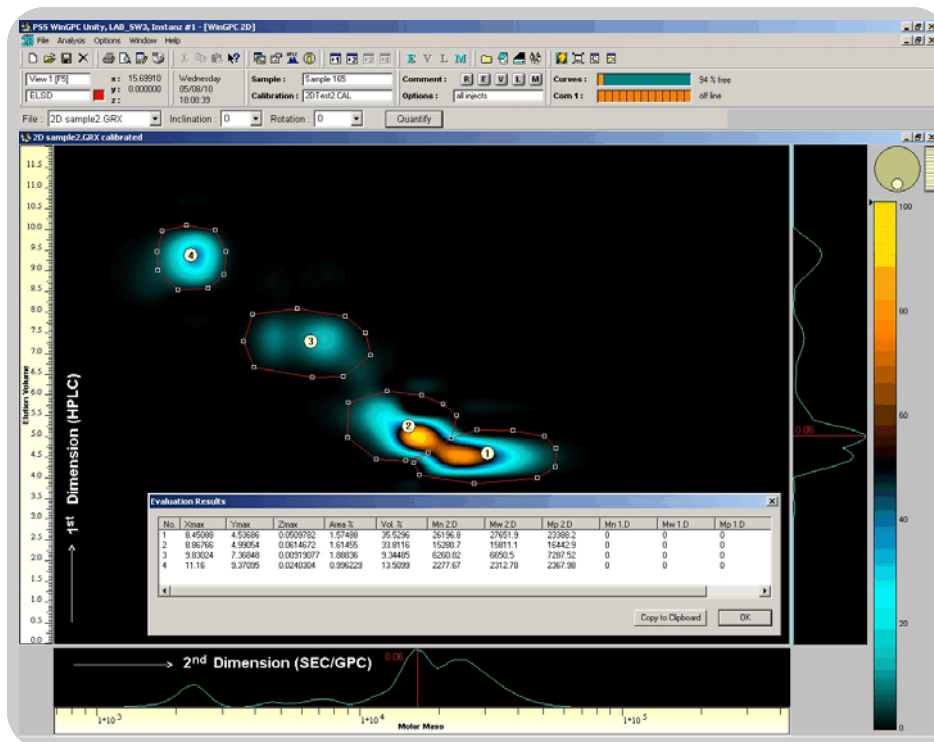




WinGPC Unity 2D Chromatography Module

Obtaining chemical composition and molecular weight distribution in a single run



2D Analysis

2-dimensional (2D) chromatographic analysis combines the separation power of two different chromatographic methods (e.g. HPLC, SEC/GPC, TREF, IC, CE) resulting in enhanced resolution, peak capacity and in-depth information of sample components.

HPLC-SEC/GPC provides the polymer chemist with valuable information with respect to the functionality, architecture, chemical composition and molecular weight distribution of complex polymers in a single run. More detailed information on the technique are available in the PSS 2D Primer "Facing the Challenge of Analyzing Complex Polymers"

2D Software Module

This easy-to-use 2D chromatography module allows data acquisition and control of fraction transfer between two liquid chromatographic systems. The results are presented as 2D

contour or 3-dimensional surface plots. The separated compounds may be selected with a comfortable tool to create a results table with molecular weight averages and quantitative information.

2D Applications

Major targets are separation and identification of polymer blends and copolymers.

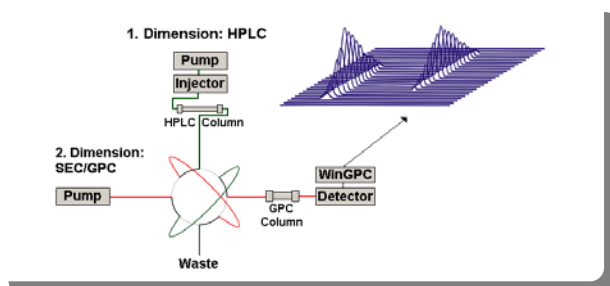
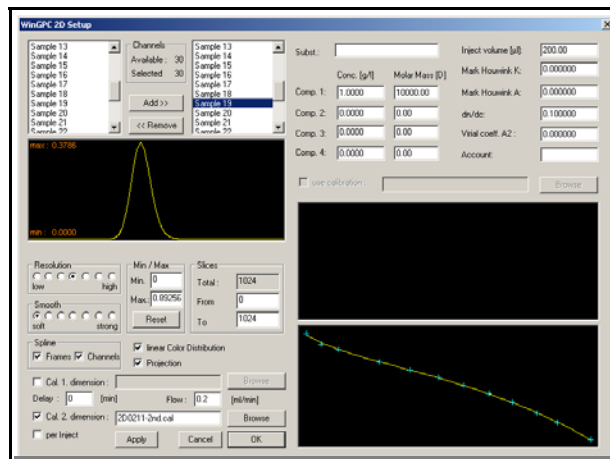
- Separation of additives from main polymer(s)
- Determination of blocking efficiency in linear and star copolymers
- Identification of various polymeric species in star copolymers
- Ability to gain information about the molecular structure and chemical composition of graft copolymers

Measuring Principle

The two LC systems are coupled together via a dedicated transfer valve containing two storage loops. The polymeric sample is injected into the first system in order to be separated according to a specific property (e.g. chemical composition). The eluent that leaves the first dimension is fractionated by alternately filling the storage loops and transferring the fractions into the second dimension. Each fraction will be there separated according to another property (e.g. molar mass) in order to achieve a good deformation of the complete sample.

This process may be automated with the powerful WinGPC Unity 2D module. It is capable to control the transfer valve via the PSS UDC interface which will also be used for the data acquisition from any detector on the market.

the 1st dimension even inject dependent), analyzing molar mass information of certain areas or changing the color schemes will be done using the comfortable 2D dialogs.



Data Acquisition and Analysis

After setting up the methods for both dimensions, the transfer valve will be programmed automatically using the PSS 2D-Wizard. The "Automated 2D valve setup" initializes, starts and stops the valve as well as the data acquisition. All transfer injections will be saved in a sequence which can be analyzed like a normal GPC data set. The baselines have to be set (automatically or with manual input) and then the data may be transferred with a mouseclick into the 2D window. Further operations like adding calibration curves (for

Features

Requires minimum operator intervention which saves you time.

- Vendor independent data acquisition from a variety of LC detectors
- HPLC and SEC performed in a single run
- Calibration of both X- and Y-axes according to molecular weight, % composition etc.
- Step-by-step 2D-Wizard guides you through the instrumentation set-up procedure
- Requires minimum operator intervention which saves time
- Overlaying of 2D-contour plots from different analyses to identify variations in sample composition
- 360° angle rotation of 2D-contour and 3D-surface plots
- The SEC and HPLC traces are projected along their respective axes
- Saving and re-calling integration grids to speed up the future analysis of similar samples under same conditions

System requirements

Hardware	Pentium 3, 600 MHz, 256 MB RAM, 20 GB Hard disk, XGA Graphic Card, 17" Monitor
Operating system	Windows 9x, ME, NT, 2000, XP

Order information

Module for 2D	400-1008
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