APPLICATION NOTE

3.04 PHARMACEUTICAL & BIOTECH

CHROMATOGRAPHIC SOLVENT CONCENTRATION

- Real time in-line continuous measurement
- Non-destructive analysis
- Yield Optimization
- Quality control
- Dual-wavelength measurement

The versatility and efficacy of chromatographic techniques have made them essential in both large scale and analytical separations. Chromatography is widely used in bioprocessing to separate protein molecules from concentrated process fluids. The center of a chromatography system is a column, filled with a media specific to the separation being carried out.

APPLICATION

Solvent gradient control can significantly enhance peak separation and the process economy of chromatography applications.

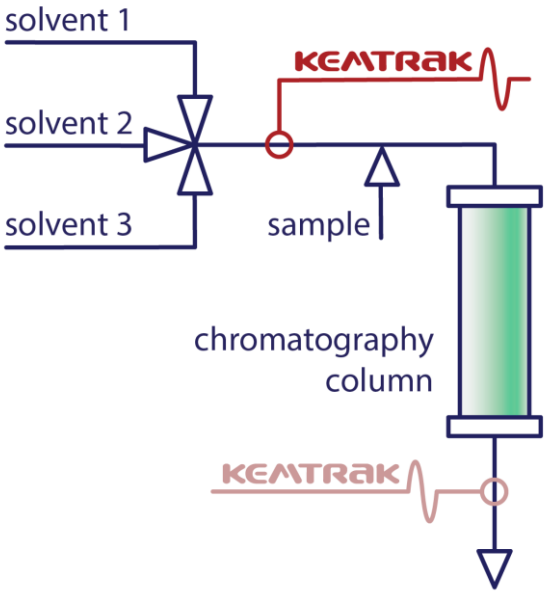
An in-line quantitative sensor permits on-line mobile phase assessment, which with controlled feedback can guarantee accurate and reproducible results. Controlled gradients minimize the effects of changing properties of the stock solvents.

INSTALLATION

Pre-Column chromatography monitoring

The Kemtrak DCP007-NIR mounted in-line before the chromatography column, monitoring the solvent, gives the user control over the composition delivered to the chromatography column.

Online monitoring of solvent composition is more significant than measuring physical parameters like mass flow alone. As It allows the generation of batch report that confirms actual gradient composition and inhibits incorrect solvent use.



It also permits correction of changing feed stock solvent makeup.

Using a Kemtrak DCP007-NIR photometer and feedback control allows the formation of accurate and reproducible solvent gradients at any scale regardless of deviation in temperature, composition, and delivery methods of solvents.

These deviations occur commonly in production scale chromatography and can drastically affect gradient accuracy and reproducibility.

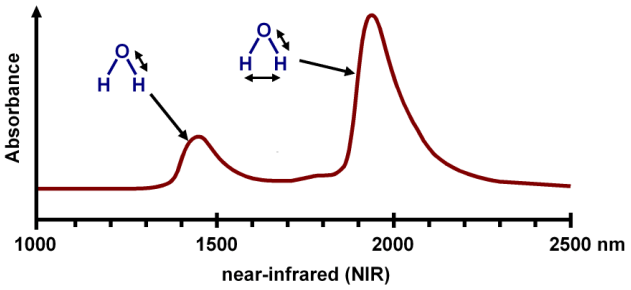
The Kemtrak DCP007-NIR is an advanced dual wavelength NIR photometer and can accurately measure water/solvent mixtures.

Kemtrak hygienic measurement cells available with FDA and UPC VI approved materials, convenient zero dead volume design and contain no electronics or moving parts for ease of use.

Two versions of the Kemtrak DCP007-NIR are available:

DCP007-NIRL (850 – 1550 nm) for measurement of 0 - 100% water and solvent gradients.

DCP007-NIRH (850 – 2000 nm) for trace water and hydrocarbon detection. This model incorporates multiple stage peltier cooled and temperature regulated photodiodes and NIR LED light source for the very best in stability and performance.



Water absorption peaks in NIR