



ALKION™ Column and Eluant System

For Separation of Strongly Basic and Positively Charged Compounds

INTRODUCTION

The stationary phase in the ALKION column is a rigid, non-porous polymeric phase that is surface sulfonated. The two modes of separation are ion-exchange and moderate partitioning. The low capacity of the ion-exchange resin makes it an ideal phase for the separation of strongly basic and positively charged compounds. The reversed-phase character allows for discrimination between closely related species.

CONCEPT

Ion-exchange

If the cations being separated are positive by virtue of being basic, then there are two options to effect separation: titration (increasing the pH), or competitive ion-exchange. As the eluant pH increases, the bases become neutral and so are released in the reverse order of their respective pK_b 's. Positive compounds are eluted by the continuous flow of cations or by increasing cation concentration over time.

Reversed-phase

Partitioning is accomplished by the use of water miscible organic solvents. In this instance, the optimum choice is *i*-Propanol (*i*PA).

BENEFITS

Neutral and weakly basic components of the sample matrix are not retained and so elute early in the chromatogram, causing little or no interference with the separation of strongly basic and cationic analytes. This means that minimal sample cleanup is required before analysis; usually centrifugation and filtration are sufficient.

The Execution

The ALKION eluant system consists of four phases: a buffer (K01), a titrant (K02), an ionic strength adjuster (K03) and a solvent, *i*PA. The K01/K02 ratio controls the pH, the % K03 controls the eluant normality and the *i*PA mediates the partitioning.

Specifications

DIMENSIONS:	4 x 150 mm
RESIN:	12 μ m, Sulfonic acid, K ⁺ form
CAPACITY:	~ 26 μ eq./column

Titration of K01 with K02

