

**PICKERING  
LABORATORIES**

# ALKION™ Column and Eluant System

## 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<sub>b</sub>'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

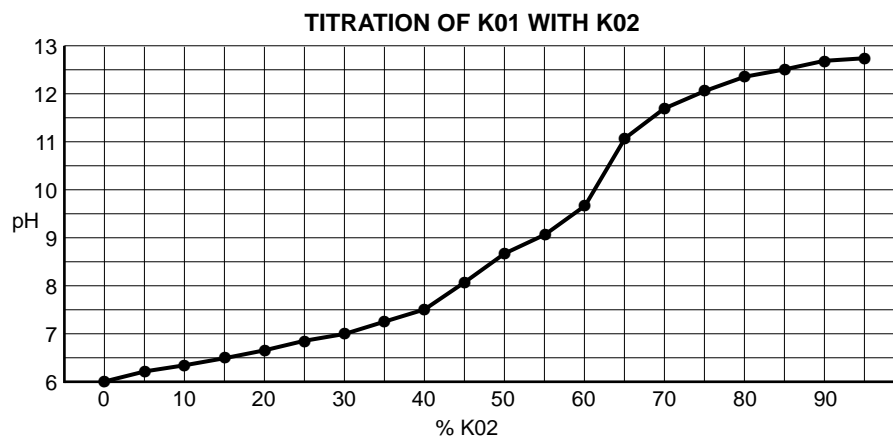
The ALKION eluant system consists of four phases: a buffer (K01), a titrant (K02), an ionic strength adjuster (K03) and a solvent, *i*PA. The K01/K02 ratio controls the pH, the % K03 controls the eluant normality and the *i*PA mediates the partitioning.

## Specifications

*Dimensions:* 4 × 150 mm

*Resin:* 12 μm, Sulfonic acid, K<sup>+</sup> form

*Capacity:* ~ 26 μeq./column



## ORDERING INFORMATION

CATALOG NO.	DESCRIPTION
9410917	ALKION Cation-exchange Column, K form, 4.0 × 150 mm
9493020	ALKION Guard Column, K form, 3.0 × 20 mm
1700-1101	K01, Potassium buffer, 4 × 950 mL
1700-1102	K02, Potassium titrant, 4 × 950 mL
1700-1103	K03, Potassium ionic strength adjuster, 4 × 950 mL

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