TE000725

Shodex

Operation Manual

(temporary)

Anion separation columns for suppressor method

Shodex IC SI-50 4E

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● Introduction

The Shodex IC SI-50 4E column is developed for use in suppressor method anion chromatography.

The seven anions (fluoride, chloride, nitrite, bromide, nitrate, phosphate and sulfate) and organic acids (for examples: acetate, formatecan, methacrylate and oxalate) be separated with high sensitivity.

● Specifications

Table 1

Product name	Column size (i.d. x L (mm))	Theoretical plate number	Particle size	Application
IC SI-50 4E	4.0 x 250	≧10,000 (Br)	5 um	For analysis
IC SI-90G	4.6 x 10	****	9 um	As guard column

The packing material is an anion exchanger made from polyvinylalcohol gel chemically bonded with quaternary ammonium.

The liquid with which the columns are filled at delivery is a mixture of 3.2 mM Na_2CO_3 and 1.0 mM $NaHCO_3$.

Table 2

	SI-50 4E
Column material	PEEK
Recommended eluent	3.2 mM Na_2CO_3 + 1.0 mM $NaHCO_3$
Maximum flow rate	0.8 mL/min
Recommended flow rate	0.7 mL/min
Maximum pressure	15.0 MPa
Usable pH range	pH 3～12
Recommended temperature range	20 ～ 60 ℃

● Sample pretreatment

1) Inject the sample into the column only after it has been passed through a 0.45 μm membrane filter to remove particles.

2) Any sample containing protein should be injected into the column only after protein has been eliminated from the sample.

3) Inject the sample containing organic impurities into the column only after the sample has undergone solid extraction treatment (Sep-Pak PS-1).

●Eluent

Normally aqueous solution of descrived in the tabel 2 can be used as an eluent for Shodex IC SI columns.

1) 3.2 mM Na_2CO_3 + 1.0 mM $NaHCO_3$

Measure 0.339g of Na_2CO_3 and 0.0840g of $NaHCO_3$ into a 1 liter measuring flask. Make it up a 1 liter solution using distilled and deionized water.

● Storage

The column should be throughly flushed with fresh eluent.
Column disconnected from the LC system should be tightly capped both ends to prevent internal drying, and stored in an room that has less temperature fluctuation.

● Regenaration

Cause	Washing procedure
Polution by low valency hydrophilic ions	Washed by the following steps. (flow rate 0.3 ml/min) 1. 25 minutes : deionized water 2. 100 minutes: 10 times concentrated eluent 3. 25 minute: deionized water 4. 100 minutes: eluent
Polution by high valency hydrophobic ions	Washed by the following steps. (flow rate 0.3 ml/min) 1. 25 minutes : deionized water 2. 20 minutes: 5% acetonitrile 3. 100 minute: 100% acetonitrile 4. 50 minutes: deionized water 5. 100 minutes: eluent