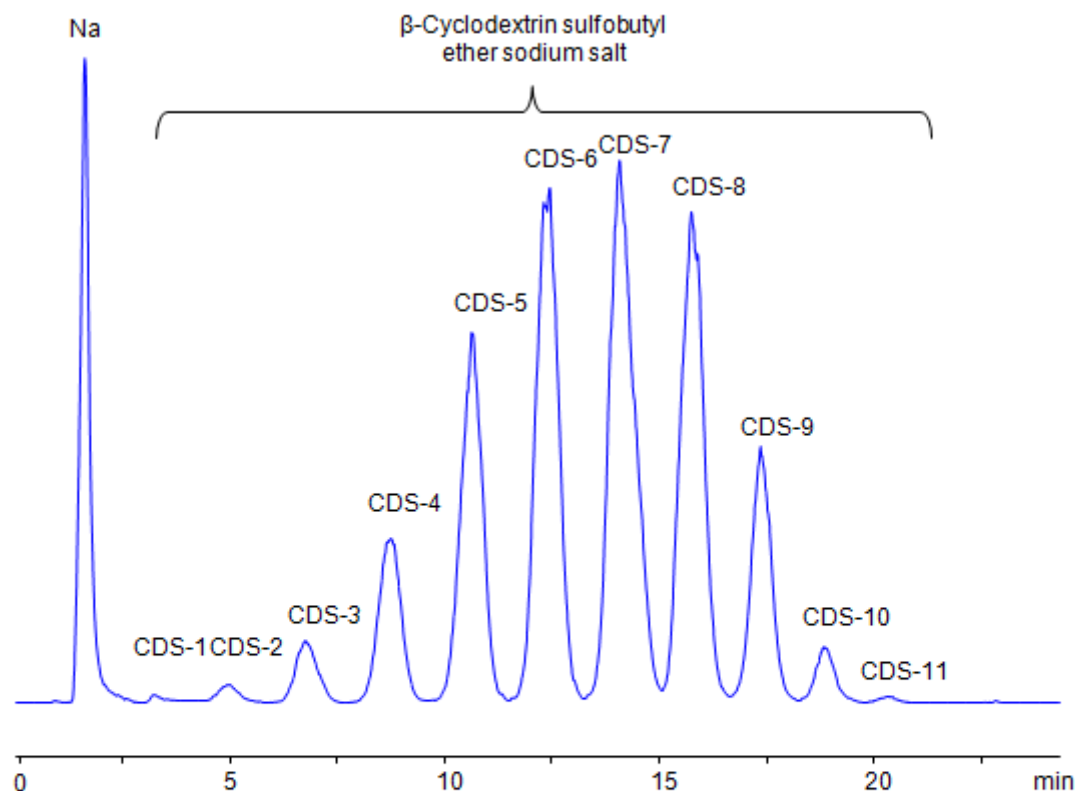


HPLC Method for Analysis of Sulfobutyl ether Beta Cyclodextrin Sodium (SBECD) on BIST™ A Column

<https://sielc.com/hplc-method-for-analysis-of-sulfobutyl-ether-beta-cyclodextrin-sodium-sbeed>

Chromatogram



Column:	BIST™ A
Column size:	4.6 × 50 mm, 5 µm
Mobile phase:	Gradient MeCN 70 → 40%, 30 min
Buffer:	TMDAP acetate, 10 mM pH 5.0
Flow rate:	1.0 mL/min
Detection:	ELSD, t- 70 C

Description

· HPLC Method for Analysis of B-Cyclodextrins sulfobutyl ether on a BIST A .

Cyclodextrins are ring-shaped oligosaccharides formed in nature by the digestion of cellulose by bacteria. Cyclodextrins have utility for solubilizing and stabilizing drugs. B-Cyclodextrins sulfobutyl ether is a cyclodextrin made of 7 glucose subunits, each with a negatively-charged sulfobutyl ether group attached.

Using SIELC's newly introduced BIST™ method, B-Cyclodextrins from different manufacturers, can be retained on a negatively-charged, cation-exchange BIST™ A column. There are two keys to this retention method: 1) a multi-charged, positive buffer, such as N,N,N',N'-Tetramethyl-1,3-propanediamine (TMDAP), which acts as a bridge, linking the negatively-charged B-Cyclodextrin analytes to the negatively-charged column surface and 2) a mobile phase consisting mostly of organic solvent (such as MeCN) to minimize the formation of a solvation layer around the charged analytes. With a fairly simple gradient, these cyclodextrins can be separated and retained on a BIST™ A column. The gradient is necessary because of the extremely strong retention in BIST™. By slowly transitioning to a low-organic mobile phase, the solvation layer increases, reducing BIST™

interactions, and the analytes are able to elute in an appropriate amount of time. Various manufacturers' B-Cyclodextrins can be retained and separated using BIST™, and this method is compatible with mass spectrometry (MS), evaporative light scattering detection (ELSD), charged aerosol detection (CAD).

Method Parameters

Mobile Phase	MeCN Gradient
Buffer	TMDAP (N,N,N',N'-Tetramethyl-1,3-diaminopropane) acetate – 5 mM pH 5.0
Flow Rate	1.0 ml/min
Detection	ELSD, 70C
Class of Compounds	Polymer, Drug
Analyzing Compounds	Sulfobutyl Ether-beta-cyclodextrin

HPLC Column Used

BIST A, 4.6 x 50 mm, 5 µm, 100 Å, dual ended

[Order this column at hplc-shop.de →](https://www.hplc-shop.de)