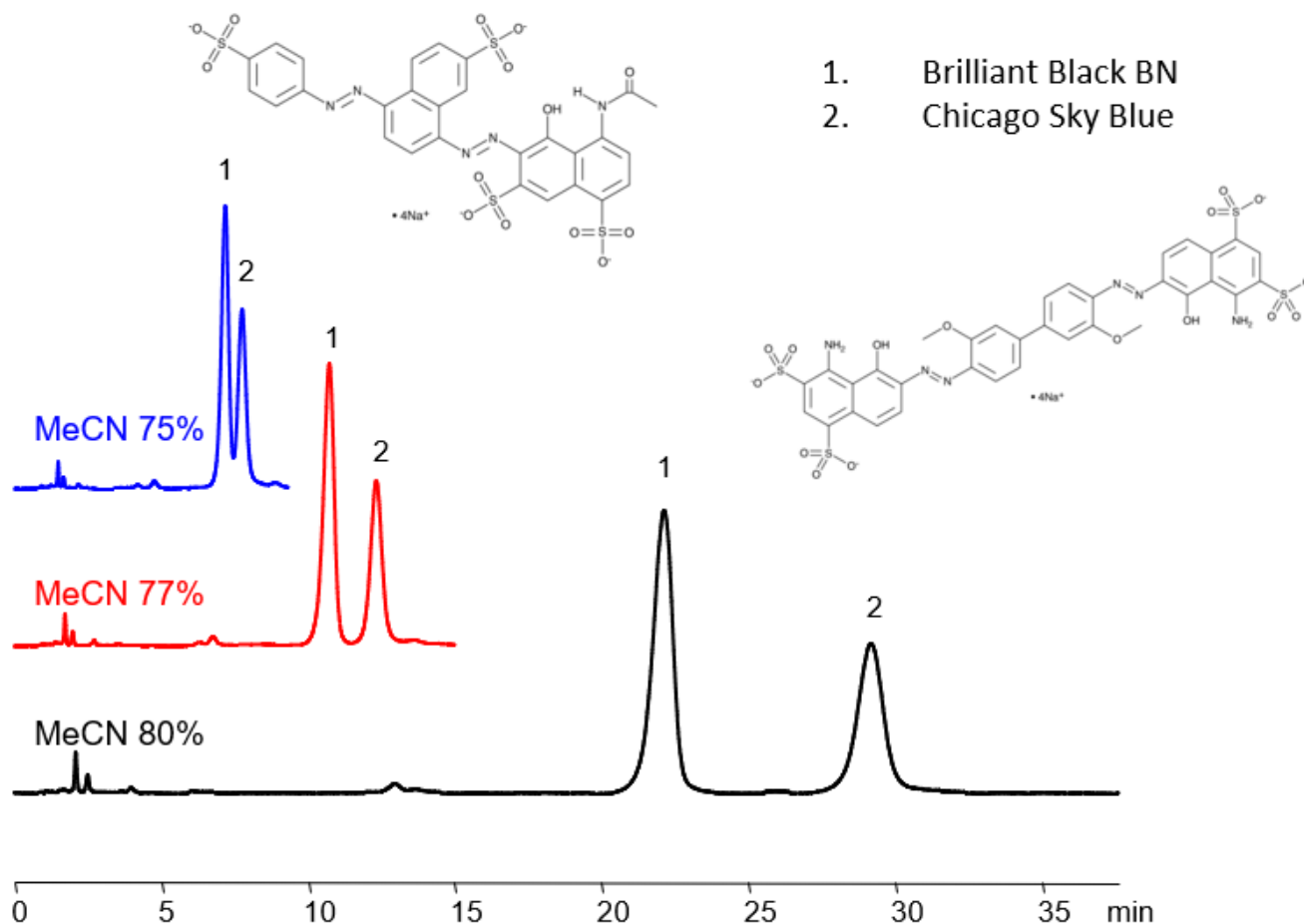


HPLC Method for Analysis of Brilliant Black BN and Chicago Sky Blue on BIST A Column by SIELC Technologies

<https://sielc.com/hplc-method-for-brilliant-black-chicago-sky-blue>

Chromatogram



Column:	BIST A
Column size:	4.6 × 150 mm, 5 µm
Column part number:	TA-46.150.0510
Mobile phase:	MeCN
Buffer:	TMDAP formate – 5 mM pH 5.0
Flow rate:	2.0 mL/min
Detection:	Vis 600 nm

Description

High Performance Liquid Chromatography (HPLC) Method for Analysis of Brilliant Black BN , Chicago Sky Blue 6B .

Brilliant Black BN (Food Black 1, E151) is a synthetic black daizo dye with the chemical formula C 28 H 17 N 5 Na 4 O 14 S 4 . It is also known as Food Black 1 and Napthol Black . It is approved for use in the European Union, but is banned in United States and Japan. It is often used in food for decorating. You can find detailed UV spectra of Brilliant Black BN and information about its various lambda maxima by visiting the following link.

Chicago Sky Blue 6B is an organic dye also known as Direct Blue 1 and has the chemical formula $C_{34}H_{24}N_6Na_4O_{16}S_4$. It is typically sold as a blue powder and is primarily used in histochemistry. Commercially, it is also used in dyeing textiles with high contents of cellulose. You can find detailed UV spectra of Chicago Sky Blue 6B and information about its various lambda maxima by visiting the following link.

Brilliant Black BN, Chicago Sky Blue 6B are azo dyes with the unique property that they have 4 sulfonate groups. Using SIELC's newly introduced BIST™ method, Brilliant Black BN, Chicago Sky Blue 6B can be retained and separated into its component compounds easily 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 anion 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. While both of these sulfonated dyes have the same charge, their molecular structure (and therefore charge distribution) differs just enough to allow them to be separated in a high-organic MP.

Other positively-charged buffers that can generate BIST™ include DMP, Calcium acetate, and Magnesium acetate. Using this new and unique analysis method, Brilliant Black BN and Chicago Sky Blue can be retained and separated with high selectivity and great peak shape. This method can be detected and is compatible with ELSD, CAD, and Mass Spectrometry (LC-MS).

Method Parameters

Mobile Phase	MeCN
Buffer	TMDAP phosphate – 5 mM pH 4.0
Flow Rate	2.0 mL/min
Detection	Vis 600 nm
Class of Compounds	Dyes
Analyzing Compounds	Brilliant Black BN, Chicago Sky Blue 6B

HPLC Column Used

BIST A, 4.6 x 150 mm, 5 µm, 100 Å, dual ended

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