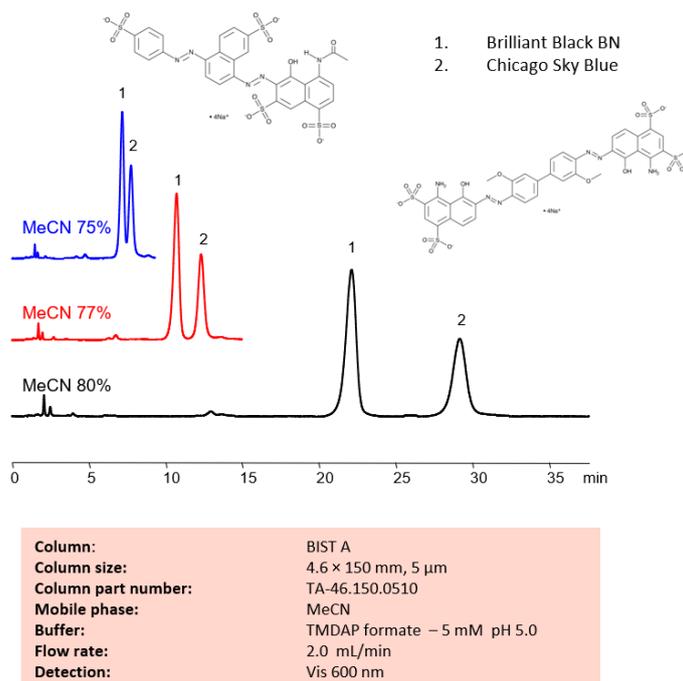


HPLC Method for Analysis of Brilliant Black BN and Chicago Sky Blue on BIST A Column by SIELC Technologies



Brilliant Black BN (Food Black 1, E151) is a synthetic black diazo dye with the chemical formula $C_{28}H_{17}N_5Na_4O_{14}S_4$. It is also known as Food Black 1 and Naphthol 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.

Chicago Skye 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.

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

Column	BIST A, 4.6 x 150 mm, 5 µm, 100 Å, dual ended
Mobile Phase	MeCN
Buffer	TMDAP phosphate – 5 mM pH 4.0
Flow Rate	2.0 mL/min
Detection	Vis 600 nm

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