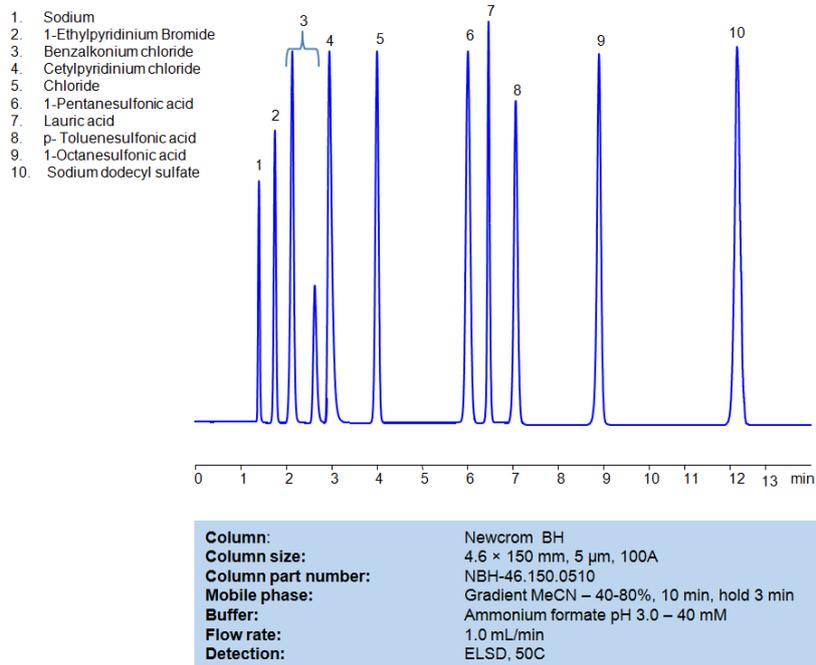


HPLC Method for Separation of Hydrophobic, Cationic and Anionic Surfactants on Newcrom BH Column



Separation type: Liquid Chromatography Mixed-mode

Surfactants, also known as surface-active agents, are compounds that lower the surface tension (or interfacial tension) between two liquids or between a liquid and a solid. Surfactants may act as detergents, wetting agents, emulsifiers, foaming agents, or dispersants.

They are often classified according to the charge of the polar head group:

Anionic Surfactants: These surfactants have a negative charge on their polar head group. Common examples include soap, sodium laureth sulfate, and sodium lauryl sulfate. They are commonly used in detergents and shampoos due to their ability to emulsify oils and hold dirt in suspension, so it can be rinsed away.

Cationic Surfactants: These surfactants have a positive charge on their polar head group. Examples include cetyltrimethylammonium bromide (CTAB) and benzalkonium chloride. These are often used as antiseptics and can also be found in hair conditioners because they reduce static cling.

Nonionic Surfactants: These surfactants have no charge on their polar head group. Examples include alcohol ethoxylates, nonylphenol ethoxylates, and polysorbates. Nonionic surfactants are often used in laundry and dishwasher detergents.

All compounds can be retained, separated, and analyzed using a reverse-phase Newcrom BH, 4.6 x 150 mm, 5 µm, 100 Å, dual ended column. The mobile phase for this method consists of water, acetonitrile (MeCN), and Ammonium formate, which serves as a buffer. This analytical method can be detected with an Evaporative Light Scattering Detector (ELSD) or any other evaporative detection method (CAD,

ESI-MS).

Method Parameters

Column	Newcrom BH, 4.6 x 150 mm, 5 µm, 100 Å, dual ended
Mobile Phase	Gradient MeCN -40-80%, 10 min
Buffer	Ammonium formate pH 3.0 – 40 mM
Flow Rate	1.0 mL/min
Detection	ELSD, 50C

Quelle: <https://sielc.com/hplc-separation-surfactants2>