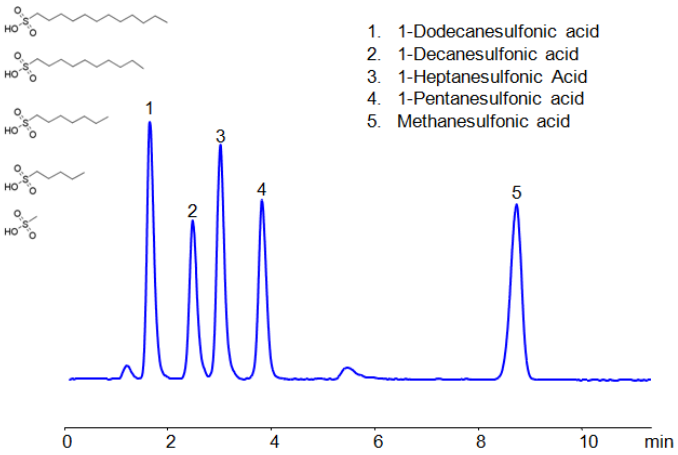
HPLC Method for Analysis of Sulfonic acids on BIST A+ Column



Column:	BIST A +
Column size:	2.1 × 100 mm, 3 µm
Column part number:	TAP-21.100.0310
Mobile phase:	MeCN - 90%
Buffer:	TMDAP formate – 5 mM pH 4.0
Flow rate:	0.4 mL/min
Detection:	ELSD, 80C

Separation type: Bridge Ion Separation Technology, or BIST™ by SIELC Technologies

Methanesulfonic acid is a popular non-volatile catalyst used in organic reactions due to it being a strong acid. Other sulfonic acids, like 1-Pentanesulfonic acid, 1-Heptanesulfonic acid, 1-Decanesulfonic acid, and 1=Dodecanesulfonic acid are typically used in ion chromatography and for organic syntheses. Using SIELC's newly introduced BIST™ method, a mixture of these Sulfonic acids can be separated on a negatively-charged, cation-exchange BIST™ A+ column, contrary to conventional chromatographic wisdom. 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. Other positively-charged buffers that can generate BIST™ include Calcium acetate and Magnesium acetate. Using this new and unique analysis method, these Sulfonic acids can be separated, retained, and detected through ELSD. This method is also compatible with Mass Spectrometry (LC-MS) and CAD.

Method Parameters

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Buffer	TMDAP formate pH 4.0 – 5,0 mM
Flow Rate	0.4 mL/min
Detection	ELSD, 80C

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