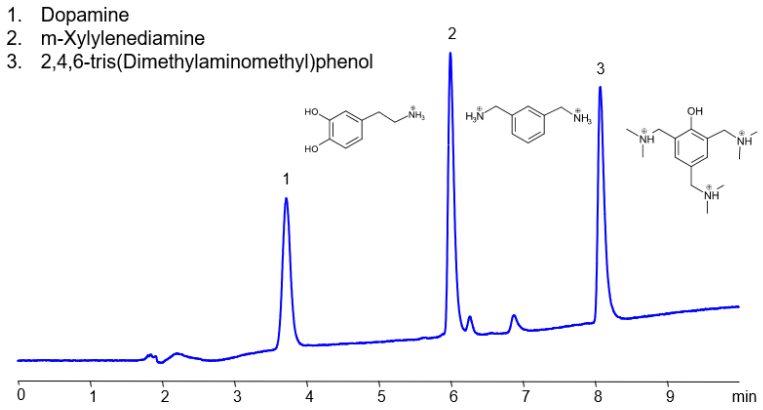
HPLC Method for Separation of Amines in Non Aqueous MP on BIST B+ Column



Column:	BIST B+
Size:	4.6 x 150 mm, 5 µm
Column part number:	TBP-46.150.0510
Mobile phase:	Gradient IPA/MeOH 80/20% →100% MeOH in 5 min, 5 min hold
Ionic modifier:	0.1% H_2SO_4
Flow:	1.0 mL/min
Column temperature:	30°C
Detection:	210 nm

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

Dopamine is a key neurotransmitter and medical stimulant used to treat low blood pressure, low heart rate, and heart attacks. m-Xylylenediamine (MXDA) is a popular curing agent used on epoxy resins. 2,4,6-Tris(dimethylaminomethyl)phenol is another amine-based curing agent used on epoxy resins. Using SIELC's newly introduced BIST method, these 3 amines can be retained on a positively-charged anion-exchange BIST B+ column. There are two keys to this retention method: 1) a multi-charged, negative buffer, such as Sulfuric acid (H2SO4), which acts as a bridge, linking the positively-charged analytes to the positively-charged column surface and 2) a mobile phase consisting mostly of less polar organic solvent (such as IPA) to minimize the formation of a solvation layer around the charged analytes. This method uses an entirely non-aqueous mobile phase to drive BIST retention. The gradient starts with a high concentration of the less polar IPA to generate the initial BIST retention and progresses to the more polar MeOH to elute the longer-retaining amines in a reasonable time. Using this new and unique analysis method, these 3 amines can be retained and UV detected at 210 nm.

Method Parameters

Column	BIST B+, 4.6 x 150 mm, 5 µm, 100 Å, dual ended
Mobile Phase	Gradient IPA/MeOH- 80/20% to 100% MeOH, 5 min , 5 min hold
Buffer	H2SO4 – 0.2%
Flow Rate	1.0 mL/min
Detection	UV 210 nm

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Quelle: https://sielc.com/hplc-separation-of-amines