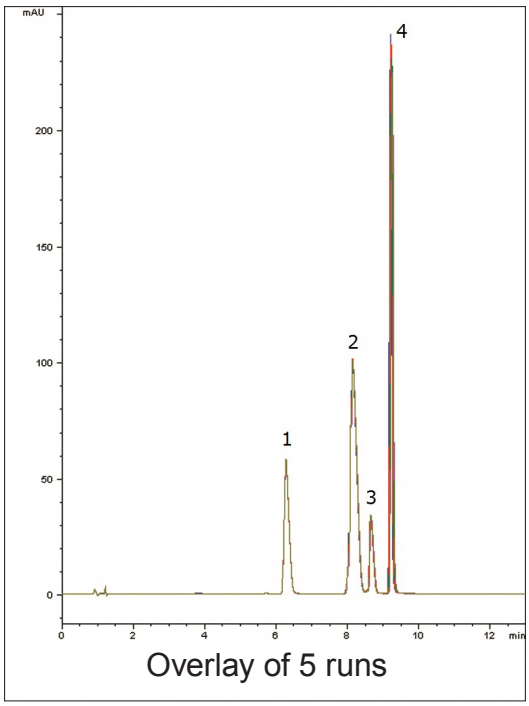
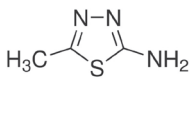
Organic Bases and Isomers

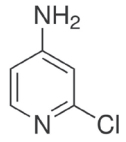
Separation four amine-containing test solutes



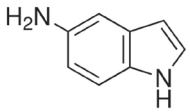
Overlay of 5 runs



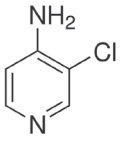
1



2



3



4

Note: Organic bases have a tendency to tail using many HPLC columns due to interactions with residual silanols on the stationary phase surface. With TYPE-C™ Silica based columns these silanols are mostly replaced with Si–H groups, which often leads to more symmetrical peak shapes for these kinds of analytes.

Method Conditions

Column: **Cogent Diamond Hydride™**, 4µm, 100Å

Catalog No.: 70000-7.5P

Dimensions: 4.6 x 75 mm

Mobile Phase: A: DI H_2O / 0.1% formic acid
B: Acetonitrile / 0.1% formic acid

Gradient:

time (min.)	%B
0	95
2	95
9	65
10	95

Post time: 3 min

Injection vol.: 1µL

Flow rate: 1.0 mL/min

Detection: UV 254 nm

Samples: 1mg/mL stock solutions of the four test solutes were prepared using a 50/50 solvent A / solvent B diluent. 100µL aliquots of each were mixed and diluted with 600µL of the diluent.

Peaks: 1. 2-amino-5-methyl-1,3,4-thiazole
2. 4-amino-2-chloropyridine
3. 5-amino-1H-indole
4. 4-amino-3-chloropyridine

t_0: 0.9 min

Discussion

Cogent Diamond Hydride columns are well-suited to analysis for organic bases. The four test solutes selected for this application are both well-retained and well-resolved. In particular, the separation between the two isomers is readily accomplished, which may be difficult to achieve in reversed phase. The method uses only formic acid as the mobile phase additive and is LC-MS compatible. This is in contrast with many reversed phase methods, which may require ion pair agents in the mobile phase.

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