MICROSOLV TECHNOLOGY CORPORATION
HPLC Columns and Chromatography Accessories

SINCE 1992

How do I avoid distorted peak shapes when using a basic mobile phase pH for the analysis of a lipophilic amine – FAQ

You may not require a basic mobile phase pH for HPLC analysis of these types of analytes.

Use of the Cogent Diamond Hydride™ column in an Aqueous Normal Phase ANP method using with 0.1% formic acid instead of a basic mobile phase may be a better approach.

There are a number of possible reasons that you may have observed a distorted peak shape under the basic mobile phase conditions. Some possible explanations and their solutions are discussed here:

- *The column might be overloaded.* This could be due to an excessive sample concentration or too large of an injection volume. Typically injection volumes of 1 to 5 microliters are appropriate. If that is the amount you were injecting, then try diluting the sample some to see if that resolves the problem.
- *The sample diluent may not be appropriate*. If there is a mismatch between the diluent and the mobile phase, distortion of the peak can occur. In most cases, a sample solvent of 50:50 of the mobile phase components is suitable. For example, 50:50 acetonitrile / water both with 0.1% formic acid.
- *The peak shape may be able to be improved with an ANP gradient with 0.1% formic acid*. Try starting off with a linear gradient going from 95% B to 30% B over a time frame of 10 minutes. Once you have an idea of the retention and resolution under these conditions, then you can adjust the gradient for better separation and

resolution.

We have a number of examples of lipophilic amines being retained in ANP mode using the Diamond Hydride column, such as cetylpyridinium chloride.