

I have an Ultra Quat column and I know how to use it...

May 20th, 2013 by Nancy Schwartz

Are those words you wish you could say? Most recently, we seem to encounter more customers asking for advice in preparing a mobile phase for their Diquat and Paraquat analysis (related to EPA Method 549). There are a couple of different scenarios for this analysis. Please note that the procedures described here are intended for use with a modified version of EPA Method 549, and the mobile phases are not the same.

Case #1- Using HPLC with UV detection.

Perhaps this is a new project for you or you might have used our Ultra Quat Mobile Phase Modifier in the past and you want to use something that works similarly in conjunction with your Ultra Quat HPLC column (150 x 4.6 mm, 5 um, catalog# 9181565 in this case). Below is the suggested procedure to make mobile phase, taken from one of our Technical Bulletins.

Ultra Quat Reagent Solution preparation instructions:

Obtain sodium hexafluorophosphate (NaPF₆), purity 98% or greater, such as currently offered by Sigma Aldrich and other vendors. * Caution statement: neat material is corrosive and hygroscopic – read the MSDS for proper handling and storage.

For 1 liter of Ultra Quat Reagent Solution, used to aid the separation of paraquat and diquat on your Ultra Quat HPLC Column, follow these instructions:

1. Using an analytical balance weigh out 5040mg of Sodium Hexafluorophosphate into a clean and dry glass vial.
2. Rinse 1 liter volumetric flask with HPLC Grade water to remove any contamination.
3. Transfer the Sodium Hexafluorophosphate from vial to the 1 liter volumetric flask.
4. Triple rinse vial with HPLC Grade water and transfer rinsate to flask.
5. Bring flask to volume with HPLC Grade water, stopper, and shake well to dissolve – solution is now ready for use.
6. Solution has limited stability. Use prepared solution as soon as possible. Use this prepared solution as “Mobile Phase A”. Use 100% acetonitrile as “Mobile Phase B”. Here are other chromatographic conditions:
 - Isocratic Flow at 95% A: 5%B, flow rate 1.0 mL/min
 - UV @ 257nm Paraquat
UV @ 308nm Diquat
 - Injection Volume 20 uL

Case #2- Using LCMSMS

Since this is a mass spec method, you will need to use a mobile phase modifier that is compatible. Our best suggestion is to follow the procedure as indicated in the following application note. The mobile phase modifier in this case is heptafluorobutyric acid, prepared at 10 mM, combined in a 95:5 ratio with acetonitrile. LCMSMS for this method is usually done with a column of smaller dimensions, catalog # 9181352 (50 mm x 2.1 mm ID, 3 μ m).

We hope that this blog clears up some questions you might have. If you have any further questions, send us an email at support@restek.com.