

Ghost peaks appearing in results using a gradient with TFA which can degrade with time - Tips & Suggestions

Question: I am running a gradient HPLC method and see a number of ghost peaks towards the end of the HPLC run. I see them in both samples and blanks. I have 0.1% TFA (tri-fluoro acetic acid) in the A and B solvents. Do you have any suggestions or a solution?

Answer: The problem may be due to the TFA. Over time, TFA can oxidize, creating impurities which then can show up in your HPLC chromatograms. This can be especially problematic when performing low-level analyses where analyte peaks of interest co-elute with the TFA impurities. The best way to overcome this problem is to make mobile phase fresh every day and use HPLC-grade TFA sold in small volume ampules. These ampules are made and sealed so as to be free from oxidation when used immediately after opening.

Tetrahydrofuran (THF), a solvent sometimes used in an HPLC mobile phase, can be another common source of mobile phase impurities. It is known to degrade and form impurities during storage. Here, it is advisable to use THF with a butylated hydroxytoluene (BHT) stabilizing agent.

