

How to choose a suitable mobile phase additive for negative ionization mode LCMS - Tips & Suggestions

For negative ionization we usually use:

- Solvent A: 10 mM ammonium formate or acetate in DI water
- Solvent B: 90% acetonitrile /10% DI water (v/v) /10 mM ammonium formate or acetate

Solvent B has to have water in order to dissolve ammonium formate or acetate. Usually a 200 mM solution of ammonium formate or acetate is prepared, vacuum filtered with a 0.45µm nylon membrane filter, and kept in the refrigerator. Dilutions are made from this stock solution as needed.

Some analytes can be analyzed with formic or acetic acids in negative ionization, but not all. Analytes which are already charged can be analyzed without ammonium acetate or formate (for example EDTA metal complexes). If you can get the compounds ionized with 0.1% formic or 0.2 % acetic acid using negative ionization mode it would be better because ammonium acetate or formate reduces the sensitivity of the MS as a detector. The signal will be much lower.