

When and why use Teflon bottles for your mobile phase reservoirs - FAQ

For most HPLC applications, standard borosilicate glass bottles are perfectly adequate for storing mobile phases. However, when working with LC-MS or LC-MS/MS systems, switching to Teflon® bottles becomes important.

Borosilicate glass is manufactured using elements like boron and sodium, which help make the glass moldable. During the manufacturing process, these elements can migrate to the surface of the glass and leach into the mobile phase. This becomes problematic in mass spectrometry because sodium and boron can form adducts with analytes. These adducts alter the molecular weight of the compounds, potentially leading to inaccurate results or missed detections.

Teflon bottles help minimize the formation of these unwanted adducts, making them a better choice for MS-based applications. This approach complements the use of [RSA™ glass vials](#), as both vials and mobile phase containers are major sources of adduct contamination in LC-MS workflows.

Beyond reducing sodium and potassium adducts in electrospray ionization, using Teflon bottles can also enhance chromatographic performance. For example, in ANP (aqueous normal phase) chromatography, lowering sodium levels improves peak shapes—especially for compounds with two acidic groups, such as aspartic acid and glutamic acid.