

Improved LC/MS Analyses Convenient CHROMASOLV® LC/MS Flush Solution ensures no interferences for high quality MS data.

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The growing use of LC/MS as an analytical tool can be attributed to its ability to provide structural information and detect compounds at extremely low concentration levels. To achieve maximum resolution and sensitivity, the background noise arising from the mobile phase and the sample memory must be eliminated. Sigma-Aldrich's CHROMASOLV® line offers the ideal combination of purity and convenience for all LC/MS applications.

To maintain minimal baseline offset and background noise, it is important to flush the LC/MS system at regular intervals; the

length of the interval depends on the nature of the samples. A commonly employed flush solution is 50% isopropanol in water because it solubilizes both hydrophilic and moderately hydrophobic contaminants. Although this solution can be easily prepared from ingredients found in most laboratories, it is critical to obtain a purity of the flush solution such that it does not add new contaminants to the LC/MS system. To eliminate the possibility of adding contaminants and also reduce the time needed to prepare your own flush solution, we have developed the CHROMASOLV® Flush Solution. This solution comprises a 50% v/v mixture of 2-propanol (isopropanol) in water. Both the 2-propanol and the water are of our highest LC/MS CHROMASOLV® quality. The mixture has been tested for GC and LC/MS purity, water content by Karl-Fischer titration, organic and non-volatile impurities, UV transmittance and levels of sixteen inorganic ions.

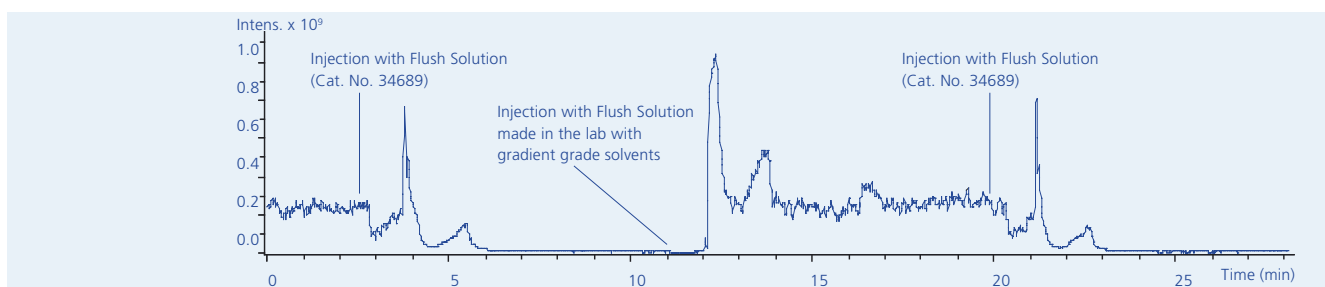


Figure 1 Purity comparison of gradient grade solvents with premixed CHROMASOLV® Flush Solution

Cat. No.	Brand	Name	Package Size
34689	Riedel-de Haën	CHROMASOLV® LC/MS Flush Solution (Water/2-Propanol 50/50 (v/v))	1 L

Table 1 Ordering Information

The data in **Figure 1** presents a clear picture on the effect of purity of flush solution on the quality of the MS chromatogram. The total ion current (TIC) is shown for full scan 100-1000 Dalton obtained with 4 µL/min direct syringe injection (no column) of different 50/50 2-propanol/water mixtures. First, a laboratory mixed solution was used, prepared carefully from gradient grade HPLC solvents. Note the high baseline offset and noise (0-3 minutes). Then, while still scanning, the content of the syringe was changed to the CHROMASOLV® Flush Solution. After the initial disturbance peaks, the baseline obtained with the CHROMASOLV® Flush Solution (6-11 minutes) was at least six-fold

cleaner with far less noise than the gradient grade solvents. To show that this is not a cleaning effect, the process was repeated. The syringe was refilled with the gradient grade solution and injected at 12 min, resulting again in higher baseline and noise (14-20 minutes). Then, the syringe was filled again with CHROMASOLV® Flush Solution and injected at 21 minutes. The flat baseline after 22 minutes confirmed the earlier observation and the purity of the CHROMASOLV® Flush Solution.

Flush solutions are necessary for thorough removal of mobile phase and sample impurities that can interfere with sensitive LC/MS analyses. To ensure your flush solution isn't itself a source of impurities, use CHROMASOLV® Flush Solution. The convenience of the pre-blended mixture and the high purity make it a ideal solution for chemists facing the promises and challenges of both routine and high-throughput LC/MS.