

How Pulsations from an HPLC Pump Can Impact Column Performance - Tech Information

Date: 14-OCTOBER-2025 Last Updated: 26-JUNE-2025

If your HPLC pump generates pulsations—cyclical fluctuations in flow or pressure—this can negatively affect both your chromatographic results and the longevity of your column.

Inconsistent flow delivery compromises the precision and accuracy of your system, potentially causing it to fail system suitability tests and introducing variability into your data. Moreover, abrupt pressure changes can disturb the packed bed within the column, reducing its effective lifespan.

To mitigate these issues, we recommend incorporating a pulse dampener into your HPLC setup. A common solution is a dual-piston pump with pistons operating out of phase, which helps maintain a more stable flow and pressure profile.

Additionally, never disconnect your HPLC column while the system is under pressure. Doing so can create a pressure shock that disrupts the column packing, leading to performance degradation.

To ensure your pump is delivering accurate and precise flow, consider using one of our Chemical Solutions brand [DIY Qualification Kits](#). It provides a reliable way to qualify your pump and verify that key performance parameters meet your expectations.

Printed from the Chrom Resource Center

Copyright 2025, All Rights Apply

MicroSolv Technology Corporation

9158 Industrial Blvd. NE, Leland, NC 28451

Tel: (732) 380-8900

Fax: (910) 769-9435

Email: customers@mtc-usa.com

Website: www.mtc-usa.com