Drawbacks in terms of robustness for HILIC columns - Tips and Suggestions

Date: 25-MARCH-2015 Last Updated: 11-OCTOBER-2025

Comparing Robustness: HILIC vs. Aqueous Normal Phase (ANP) Columns

It's well-documented that HILIC columns can be less robust than traditional reversed-phase (RP) columns. This is often due to two key factors:

1. Surface Contamination – HILIC column surfaces are prone to contamination and can be difficult to clean effectively.
2. Bonded Phase Stability – Some HILIC stationary phases are chemically fragile and may degrade or detach in mobile phases commonly used for HILIC separations.

In contrast, columns used for Aqueous Normal Phase (ANP)—such as our Cogent TYPE-C Silica™ columns—offer greater robustness when used correctly. These columns can be cleaned using a variety of techniques and maintain performance over time.

Another challenge with HILIC columns is their long equilibration time, caused by the formation of an adsorbed water layer on the surface. If not fully equilibrated, this can compromise reproducibility and robustness.

Cogent TYPE-C™ columns offer a distinct advantage here: They do not rely on a surface water layer, allowing for faster equilibration and more consistent performance—especially in LC-MS workflows.

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