Care & use of Avantor® ACE® HTP-MS columns

Thank you for purchasing this Avantor® ACE® HTP-MS column. It has been designed to provide a low-dead volume, cartridge style format together with high efficiency 2 µm UHPLC particles allowing for fast, high resolution LC-MS separations.
Every Avantor® ACE® column is manufactured and tested to exceed stringent specifications.
The following measures will enhance its performance and lifetime.

COLUMN INSTALLATION

Column connection

Avantor ACE HTP-MS 10 x 2.1mm cartridges are designed for use with the Avantor ACE HTP-MS cartridge holder only. Starter kits (P/N ACE-HTP-SK1) should be purchased initially which include one holder and one cartridge column.

Insert the HTP-MS cartridge into the holder base (male fitting is the outlet). Cartridges are nondirectional but should continue to be used in one direction once installed. Tighten the top of the holder onto the base of the holder until fingertight. Using wrenches, tighten the connection between the top and base of the holder a further 1/4 turn (90°).
In the case of leakage between the top and base, depressurise and carefully further tighten until leak is no longer present.

Connection to the LC-MS

The low dead volume holder is designed for easy connection and features a replaceable PEEK ferrule (P/N F0001). The column can be connected to the MS to minimise post column dispersion or situated in the column oven as per a conventional column. It is recommended to use short lengths of narrow id tubing with an internal diameter of 0.005" (0.127 mm) or less pre and post column, to minimise dispersion due to the very low volume cartridges.
If connected directly to the MS please ENSURE THE PRODUCT IS GROUNDED PRIOR TO OPERATION. Please contact your MS provider for further details as non compliance can result in electric shock.

Cartridge replacement

To replace the cartridge, we recommend the use of PPE (i.e. gloves). Using wrenches, loosen the connection between top and base of the holder to access the used cartridge. Replace with a new cartridge and retighten as detailed above.

Mechanical damage

Protect the column from mechanical shock. Dropping a column can impair its performance.

Equilibration

This Avantor ACE HTP-MS cartridge is shipped in the storage solvent defined on the Test Chromatogram. Flush onto the desired mobile phase (ensure that precipitation does not occur). Ensure that the column is fully equilibrated with the mobile phase prior to starting analysis.

OPERATIONAL GUIDELINES

LC solvents

Use only HPLC or LC-MS grade solvents and freshly prepared aqueous buffer solutions to minimise bacterial growth. A slip-on pump inlet filter will remove extraneous particles. HTP-MS cartridges can be used with 100% aqueous eluents if necessary.

Mobile phase pH

To ensure maximum column lifetime, a pH range of 2.0 - 8.0 is recommended. When operating at high pH, the use of an organic buffer is recommended. Avoid phosphates when running LC-MS analyses.
For further information and guidance on maximising column lifetime under your chosen evaluation conditions, please contact our Technical Support Department at **chromsupport@avantorsciences.com**.

Sample

For maximum column lifetime, always use freshly prepared sample and filter using a 0.2 µm filter.

Vials

For improved reproducibility and greater sample recovery of low abundance analytes, surface deactivated vials which virtually eliminate secondary interactions between sample and vial wall are recommended.

Pressure

Exposure to rapid changes in pressure or pressures > 15,000 psi (1,000 bar) may reduce column lifetime.

Temperature

Exposure to temperatures > 60 °C may reduce column lifetime, dependent upon mobile phase conditions selected.

Storage

Wash out any buffer (ensure that precipitation does not occur) and flush onto the storage solvent defined on the QC chromatogram. Store in a cool area.

Column cleaning

Over a period of time, columns may still become contaminated by strongly adsorbed sample components. This may be indicated by a deterioration in column performance and/or an increase in back pressure. Cleaning protocols may be used in an attempt to regenerate column performance although are not recommended.

Column warranty

All columns are warranted to meet the specifications stated on the Test Chromatogram.

Safety and disposal

This column contains amorphous silica which may be hazardous to health if the column is unpacked and the silica allowed to dry.
The silica presents no hazard whilst contained within the column.
When the column has reached the end of its useful life, dispose of it in a similar manner to the samples that have been injected onto it.
Alternatively, please contact our Technical Support Department at **chromsupport@avantorsciences.com**.