

ARION® COLUMN CARE AND PROTECTION GUIDE

1. Introduction

Thank you for purchasing the Arion® HPLC column.

Every ARION® HPLC column is a precision product which will provide excellent performance, reproducibility and column lifetime if cared for properly. The information and recommendations contained in this manual are designed to guide you in the care and use of your column. Please follow the instructions herein to maximize column performance and lifetime. If you have any questions, please contact our technical department.

UPON RECEIPT OF THE COLUMN

- Verify the column you received is the column you ordered
- Check the column for any physical damage which may have occurred during shipping
- All columns are shipped in the testing solvent, unless otherwise specified

Each ARION® HPLC column is individually packed and tested to ensure high column quality. Every column is supplied with its Test Chromatogram. The warranty period is 3 months and begins upon receipt of the column.

2. Specifications

ARION phases	Particle size (µm)	Pore size (Å)	Surface area (m ² /g)	Carbon load	pH stability	Endcapping	100% aqueous mobile phase stability
Plus C18	1.7, 2.2, 3,5,10,15	100	420	18%	1.0 to 10	Multi-step	NO
Polar C18	2.2, 3, 5, 10, 15	120	325	16%	1.5 to 7	Multi-step	YES
C8	3, 5	120	325	11%	2.0 to 7	Single-step	NO
Phenyl-Butyl	2.2, 3, 5	100	300	12%	1.5 to 7.5	Single-step	NO
NH ₂	2.2, 3, 5	120	325	5%	2.0 to 6.5	Proprietary	NO
CN	3, 5, 10	120	325	8%	2.0 to 7	Single-step	NO
HILIC Plus	2.2, 3, 5	100	420	-	1. to 7	Proprietary	YES
Si	2.2, 3, 5, 10	100	420	-	1.5 to 7	-	NO

3. Mobile phase consideration

- The correct direction of the solvent flow is indicated by an arrow on the column identification label.
- Use only HPLC or LC/MS grade solvents and water
- Use only highest purity chemicals and reagents
- Filter and degas all mobile phases and sample prior to use through a suitable membrane filter



- Repetitive replacement among solvents with a large difference in polarities might degrade the column performance
- In general, organic solvents like acetonitrile, methanol and tetrahydrofuran (THF) are recommended for regular use. When using THF as a mobile phase, be mindful of the solvent resistance of your system or tubing (PEEK parts are especially unsuitable for use with THF).
- Recommendations of pH stability of the column are shown in the specification table. When using the column at pH near the upper or lower limit, column lifetime may be shortened under certain conditions by temperature and mobile phase composition.

4. Shipping solvent and column storage

- The shipping solvent is specified on the “Certificate of Analysis”, which is enclosed with each column.
- Make sure the solvents are miscible - **using solvents that are immiscible with the solvent in the column can permanently damage the column.**
- **Salt and buffer precipitation from the mobile phase can permanently damage the column.**
- **Never store columns containing buffers or ion-pairing reagents.**
- Flush with 10 column volumes of mobile phase without buffer to remove any buffers or salts
- **Use storage solvent:**

65% Acetonitrile/35% Water	for C18, C8, Phenyl column stationary phase
Ethanol	for Normal Phase Silica, CN, NH ₂ column stationary phase
80% Acetonitrile/20% Water	for HILIC column stationary phase

5. Column cleaning

Arion® HPLC/UHPLC columns mostly use different frits on the stainless-steel tube end, which means that the **reversed flow to clean the columns is NOT recommended.**

Before starting any kind of cleaning procedure, make sure your in-column solvent or mobile phase is miscible with the recommended cleaning solvent. Flow rates should be 1/5 – 1/2 of the typical flow rate.

Method for reversed phase (C18, C8, Phenyl, CN, NH₂)

Rinse with 10 Column Volumes each of:

- 95 % Water/5 % Acetonitrile (for buffer removal)
- IPA (THF)
- 95 % Acetonitrile/5 % Water
- Mobile Phase

A cleaning solution containing THF might be effective when removing highly hydrophobic (lipid soluble) substances. Be mindful of the solvent resistance of your system or tubing, PEEK parts are especially unsuitable for longer use with THF.

Method for bonded normal phase (CN, NH₂)

Rinse with 10 Column Volumes each of:

- Chloroform
- Isopropanol
- Methylene Chloride
- Mobile Phase

Method for unbonded silica (Si)

Rinse with 10 Column Volumes each of:

- Hexane
- Methylene Chloride
- Isopropanol
- Methylene Chloride
- Mobile Phase

Water removal procedure:

Flush column with 30 mL 2.5 % 2,2-dimethoxy-propane and 2.5 % glacial acetic acid in Hexane

Method for HILIC

Rinse with 10 Column Volumes each of:

- 95 % Water/5 % Acetonitrile (for buffer removal)
- 95 % 100 mM Ammonium Acetate, pH 5.8/5 % Acetonitrile
- 95 % Water/5 % Acetonitrile
- Mobile Phase

6. ARION® Guard System (AGS)



WORKHORSE
FOR YOUR APPLICATIONS

The ARION® Guard System (AGS) is a universal guard system, which can be connected to almost any column hardware on the market. It is easy to use and it offers the shortest retention time shift of analytes in comparison with other major manufacturers. The AGS consists of a guard holder and guard cartridge, which is offered with various silica materials according to the stationary phase in the HPLC column used. As the AGS is not Finger-tight, it is necessary to tighten the holder with a wrench by approx. 90° in order to seal it. It is possible to use wrench no. 11, or 7/16 can also be used.

Universal – fits virtually any column

- The **lowest influence on retention times** compared with other guard systems
- Small size for easier installation in the column oven
- **Any orientation** of the cartridge
- Pressure rating up to **900 bar**

HAS BEEN BORN

7. *Other environments*

- The operating pressure should be kept under **350 bar** for fully porous particles.
- **2.2 µm** particles have a pressure resistance of up to **650 bar**
- **1.7 µm** particles have a pressure resistance of up to **1000 bar**
- Avoid repeatedly using a column near the pressure limit or abrupt change in pressure to prevent a shortening of the column life.
- We recommend using a pre-column filter to prevent the column frit from being clogged with samples.
- The suggested maximum temperature is 100°C; however, temperature limits are dependent on your running parameters.

WORKHORSE

FOR *Ordering information* YOUR APPLICATIONS

Complete ordering information is available at www.arionchromatography.com.

