Ultisil® HILIC Amphion II Care and Use Manual

Ultisil HILIC Amphion II is a newly developed HILIC column, using amphion-bonded silica as packing material. It applies to the separation of most polar compounds, using ACN or Water other than ion-pairing reagents as mobile phase. The Amphion, containing both Positive Charge Centre and Negative Charge Centre, brings high retention for acid and alkaline compounds through ion-exchange mechanism. Compared with common HILIC packing materials like silica and amino groups, the Amphion-bonded packing material provides better reproducibility and stability.

Features

- Amphion-bonded silica stationary phase
- Enhanced hydrophilic interaction brings higher retention for polar and hydrophilic compounds
- Different selectivity from common HILIC packing materials
- Simple mobile phase used for the separation of polar compounds

Column parameters

Bonded phase	Amphion group
USP listing	N/A
Particle size	5μm
Pore size	120 Å
Specific surface area	320m^2/g
Carbon loading	6%
pH stability	2.0-8.0
Max. Temperature	60℃(mobile phase pH ≤6.5), 40℃(mobile phase pH >6)
Max. Pressure	40MPa(≥5μm), 60MPa(<5μm)

Activation and Transition

Storage Solvent: acetonitrile

	Activation		Transition	
Column ID	≤3mm	>3mm	≤3mm	>3mm
Flow rate	0.1ml/min	0.3ml/min	0.2ml/min	1ml/min
Mobile phase	100% acetonitrile		70% acetonitrile*	
Time	4h		1h	
Temperature	30℃		30℃	
Note	No Transition required for analysis mobile phases without buffer.			

*Transitional mobile phase refers to the proportion between organic phase and aqueous phase which is the same as that of analytical mobile phase, except that there is no buffer salt. 70% acetonitrile is recommended as transitional mobile phase in most instances.

Column Daily Flushing

Back flushing recommended (reverse to the normal flow direction)

Analysis mobile phase	Without acid, alkali or salts	Containing acid, alkali or salts
Flow rate	Analysis flow rate	
Flushing mobile phase	100% acetonitrile	70% acetonitrile-100% acetonitrile
Time	Column length≤100mm, 30min each step	
	Column length>100mm, 40min each step	
Storage	Stored in 95% acetonitrile; Kept in cool dry places	

Abnormal Column Flushing

In circumstances of high column pressure, abnormal peak shape, low column efficiency or low resolution etc., use transition mobile phase to flush off the salts in the column, then flush as following; If mobile phase contains ion-pair reagents, use 50% methanol in the first step and flush as following:

Back flushing recommended (reverse to the normal flow direction)

Flow rate	Analysis flow rate
Mobile phase	50% acetonitrile–water–0.5M NaCl–water–95% acetonitrile
Time	Column length≤100mm, 100min each step
	Column length>100mm, 120min each step

Precautions

1. It is recommended to filter the sample and mobile phase before testing.

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