Ultisil® HILIC Silica Care and Use Manual

Ultisil HILIC Silica Column which packed with ultra-pure porous spherical silica gel, is the best choice to replace the silica gel column in the HILIC mode.

Features

- Type B ultra-pure porous spherical silica gel with low acidity and low metal content
- Wide pH range: 2.0-8.0
- Good lot-to-lot reproducibility

Column parameters

Bonded phase	N/A
USP listing	L3
Particle size	3μm, 5μm, 10μm
Pore size	120Å
Specific surface area	320m^2/g
End-capping	No
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	Store in pure 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	1/4 analysis flow rate
Mobile Phase	100% methanol-100% acetonitrile-100% isopropanol-100% acetonitrile
Time	Column length≤100mm, 100min each step
	Column length>100mm, 120min each step
Note	Isopropanol has high viscosity, causing high pressure. Please adjust the flow rate as needed.

Precautions

1. It is recommended to filter the sample and mobile phase before testing.
2. pH range of HILIC Silica column is 2.0-8.0. It is generally recommended to use at pH range of 2.0-7.5. Mobile phase exceeding the pH range will lead to loss of silica gel, resulting in decreased column efficiency and shorter service life. pH range should be strictly controlled.
3. Ultisil HILIC Silica column requires more than 60% organic solvents in the mobile phase. High water phase ratio can easily to lead to hydrolysis, affect column life time.

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