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WelFlash Column Care and Use Manual

WelFlash column provides a variety of bonding phases and packing medias, including porous spherical silica, amorphous silica, alumina and polystyrene-divinylbenzene (PSDVB) etc, with strict QC management throughout the manufacturing, to ensure high reproducibility, column efficiency and pressure tolerance. WelFlash uses packing materials with narrow particle size distribution, ensuring low column pressure in operation. The polypropylene tube provides great compatibility with various solvents. Also it has high pressure tolerance, column efficiency and corrosion resistance. Each column is strictly tested before delivery to ensure high recovery and reproducibility.

Installation:

1. Open the packaging and remove the plugs from both ends of the Welflash column. Keep the plugs in the box for future use.
2. Use an iron stand or other fixing device to adjust the Welflash column to the appropriate position and secure it in place. Connect the tubing properly. The Welflash column uses a Luer-lok inlet and a Luer outlet, making its fittings compatible with most manufacturers' flash ystems, such as ISCO and Biotage. It can be connected to conventional preparative LC systems using Luer fittings.

Equilibration:

Welflash columns are packed using a unique dry packing process, so before using a Welflash column, it must be equilibrated with the appropriate solvent (also known as wetting). The methods differ for normal-phase and reversed-phase columns.

1. Reversed phase: C18, C8, phenyl, etc.

Start by wetting the column with pure methanol or pure acetonitrile. The flow rate can be adjusted based on the actual situation, but it is not recommended to exceed the maximum flow rate of the Welflash column. You can also connect two Welflash columns in series and wet them at a low flow rate without connecting the detector, continuing until no bubbles appear, indicating successful wetting of the column. Then, equilibrate the Welflash column with the experimental mobile phase. Approximately 5-10 column volumes are needed for equilibration before proceeding with the experiment.

2. Normal phase: silica, CN, Diol, Amide, etc.

Start by wetting the column with a strong eluting solvent, typically the B phase (such as methanol or ethyl acetate), to completely remove bubbles from the column. The solvent can be recycled. Once the bubbles are completely expelled, equilibrate with the mobile phase to proceed with the experiment. Ensure compatibility between the wetting solution and the mobile phase to prevent solvent layering. If using low-boiling solvents such as n-hexane, dichloromethane, or ethyl acetate to wet the column, begin the experiment promptly to prevent the column from drying out due to solvent evaporation.

3. NH_2 column can be used in either normal-phase or reversed-phase mode. When used in reversed-phase mode, the aqueous phase proportion should not exceed 40%. NH_2 columns are typically used as normal-phase columns.

Precautions:

1. Welflash columns support both dry loading and liquid loading; choose the appropriate method based on your actual situation.
2. To prevent column rupture, gradually increase the flow rate to slowly raise the column pressure.
3. Water in reversed-phase columns and n-hexane or petroleum ether in normal-phase columns are not effective for removing bubbles from the column; avoid using these solvents.
4. Do not use 100% water in reversed-phase columns; the solvent should contain at least 5% organic solvent.
5. Operate the column below its maximum pressure tolerance.
6. After the separation process, purging the column can effectively remove residual solvents from the column and system.

Specification	4g	12g	25g	40g	80g	120g	220g	330g
Sample Loading 1 (g)	0.01-0.02	0.03-0.06	0.05-0.1	0.1-0.2	0.2-0.4	0.3-0.6	0.5-1.0	0.75-1.5
Sample Loading 2 (g)	0.02-0.08	0.06-0.24	0.1-0.4	0.2-0.8	0.4-1.6	0.6-2.4	1.0-4.0	1.5-6.0
Sample Loading 3 (g)	0.08-0.4	0.24-1.2	0.4-2.0	0.8-4.0	1.6-8.0	2.4-12.0	4.0-22.0	6.0-33.0
Column Volume	8mL	24mL	40mL	80mL	160mL	240mL	400mL	600mL
Min. Flow Rate	5mL/min	8mL/min	10mL/min	20mL/min	25mL/min	35mL/min	45mL/min	50mL/min
Max. Flow Rate	18mL/min	30mL/min	35mL/min	40mL/min	60mL/min	85mL/min	150mL/min	200mL/min
Pressure	Max. pressure: 200psi						Max. pressure: 150psi	

Sample Loading Calculation: ΔCV=1/Rf1-1/Rf2; Base material: silica, 40-60μm

Sample Loading 1: Sample Loading ΔCV=1; Sample Loading 2: Sample Loading ΔCV=2; Sample Loading 3: Sample Loading ΔCV=6

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