

**NEXT >>>
ADVANCE**

Frit Kit

for the preparation of
silica caps for fused silica liquid
chromatography columns

Introduction

The **NEXT >>> ADVANCE** Frit Kit provides you with the reagents and protocol you need to prepare a fused silica plug. We provide this kit for the purpose of plugging the end of fused silica capillaries for liquid chromatography systems. Other applications may utilize fused silica plugs and may or may not be compatible with the reagents provided in this kit. Please consult with our Technical Support prior to using this kit for other applications as it may not be suitable for your use.

Prior to using the kit, make sure that you have all the reagents listed in the table below and the **NEXT >>> ADVANCE** pressure cell for loading your chromatography stationary phase after frit preparation.

Included in this kit

Item	Comments
0.5mL formamide	green capped tube molecular biology grade Formamide activates the silicate solution to form the frit
1.5mL Kasil®1624	white capped tube
1.0mL Kasil®1	clear capped tube
cutting tool	white square for cutting fused silica LC column tubing
instruction booklet	this document (hello!)

NOT Included in this kit

Item	Comments
pressure cell	to apply pressurized gas for compression of stationary phase into the capillary tube
stationary phase	C4, C8, C18, etc.
glassware	small beaker, glass vial
buffers and solvents	

Instructions

1. Into a small glass vial (1 or 2 dram), pipet 300µL Kasil® 1624 (potassium silicate). **OPTIONAL: Add 100µL Kasil® 1 and mix with the Kasil® 1624. This step has been reported to improve the fidelity and strength of frits.**
2. Add 100ul formamide. Mix well via pipet.
3. Quickly dip the end of the fused silica tubing into the mixture in the vial. The surface tension of the liquid will draw it up into the capillary. **NOTE:** Dipping the end for too long will result in large silica plugs and larger dead volumes in the column.
4. To cure the solution into a porous silica plug, place the tubing into an oven (at 100 °C) for four hours or overnight.
5. The resulting plugs/frits can be stored in a dry clean area until you are ready to use them.
6. Trim the tubing after curing the frit. This will remove excess glass frit material so as to reduce the dead volume of the column.
7. Now your column is ready to be loaded with your stationary phase.

References

Maiolica, A.; Borsotti, D. & Rappsilber, J. "Self-made frits for nanoscale columns in proteomics" **PROTEOMICS**, 2005, 5, 3847-3850.

Making a Kasil Frit – MS Wiki

http://www.proteomicswiki.org/wiki/index.php/Making_Kasil_Frit