

Fritted Fused Silica

PPE (personal protective Equipment)

Do not use any of the equipment without the appropriate training. Always wear appropriate PPE when working in the lab, including goggles, lab coats and gloves. PPE is provided, ask if you cannot find the appropriate PPE or if PPE is missing. Always wear goggles when working with fused silica. Review MSDS and SOP's before working with chemicals.

Materials

Potassium Silicate, Aqueous Soln, 29.8 Deg. Baume, Pfaltz & Bauer No.:P23830-500g (Fisher part # 50-828-816)

Formamide, 99.5%, for analysis, ACROS Organics (Fisher part # AC205821000)

OR

Next Advance Inc KASIL FORMAMIDE FRIT KIT (Fisher part # NC0263146, NextAdvance part FRIT-KIT)

Fused silica 100 μm ID x 360 μm OD (Molex (former Polymicro) part # TSP100375), search Fisher site for TSP100375 for available lengths
Heater (dry bath) at $\sim 90^\circ\text{C}$

Protocol

1. Turn on the heater block and set it to $\sim 90^\circ\text{C}$
2. Cut appropriate length of 100 x 360 μm fused silica ($\sim 20\text{-}25\text{ cm}$)
3. Prepare silicate solution fresh (in 1.5 ml eppendorf tube)
 - 170 μl Potassium Silicate solution
 - 30 μl Formamide
 - vortex vigorously and make sure it is mixed well
4. Dip one end into silicate solution for a few seconds until it reaches $\sim 1\text{-}2\text{ cm}$ (inspect under microscope)
5. Wipe off the outside of the tubing with a kimwipe
6. Lay the silica filled end of the capillaries flat onto the heater block, set a second block on top to hold them down
7. Leave on the heater block over night
8. Trim the frit length to about 2 mm with a tubing cutter
9. Make sure to flush the frit. We usually pack the frit with beads of your choice and then hook it up to the HPLC and let it equilibrate at 2-3 $\mu\text{l}/\text{min}$ (e.g. 0.1% formic acid, 2% acetonitrile in water) for 5-10 mins.



