

SOP: R011

Preparation of Charring Spray for TLC analysis

Materials and Reagents:

1. Graduated beaker, 150 ml
2. Magnetic stir bar
3. Magnetic stir plate
4. Graduated cylinder, 100 ml
5. Cupric sulfate pentahydrate (VWR MK475210)
6. Phosphoric acid (VWR MK279618)
7. Water, HPLC-grade (VWR BJ365-4)
8. Serological pipet, glass, 10 ml
9. Pipet bulb
10. Chemical fume hood
11. TLC sprayer, 250 ml (Kontes 422530-0250)

Protocol:

1. _____ Measure 70 ml of HPLC-grade water into the graduated beaker.
2. _____ Add magnetic stir bar and place on a magnetic stir plate located inside a chemical fume hood.
3. _____ Carefully and slowly add 9.4 ml of phosphoric acid to the water using a glass serological pipet with a rubber bulb (note 1).
4. _____ Add 10 g of cupric sulfate pentahydrate to the phosphoric acid/water solution (note 2).
5. _____ Allow components to mix thoroughly.
6. _____ Transfer contents to 100 ml graduated cylinder, and bring volume to 100 ml with HPLC-grade water (note 3).
7. _____ Transfer spray to TLC sprayer for use (note 4).

Notes:

1. The acid may react violently with the water and create an exothermic reaction, as it comes as 14.7M in an 85% solution. Use caution with this step, including personal protective equipment such as gloves and lab coat, and perform only in a certified chemical fume hood.
2. Use only cupric sulfate pentahydrate, as any other type (i.e. anhydrous) will not go into solution.
3. This provides a final concentration of 10% cupric sulfate (w/v) and 8% phosphoric acid (v/v).
4. This spray, once charred, will detect all organic compounds.