

SOP: R013**Preparation of Dittmer-Lester Reagent****Materials**

25 M H₂SO₄
MoO₃ (molybdic oxide)
B & J grade H₂O
250 ml pyrex bottles
Whatman filter cones
Large beakers
Stir bars
Glass funnel
Fume hood
Stir plate with heat

Protocol

1. ____ Working in the chemical fume hood, add 16.044 g MoO₃ to 400 ml H₂SO₄.
2. ____ Boil gently on hot plate until the MoO₃ is dissolved.
3. ____ Allow solution to cool, cover bottle with foil, and label as Dittmer-Lester Solution I.
4. ____ Remove 200 ml Solution I to a separate bottle and add 712 mg powdered molybdenum. Boil gently for 15 min.
5. ____ Filter the cooled solution through fluted filter cones, and label this bottle Solution II.
6. ____ In an Erlenmeyer flask mix equal volumes of Solutions I and II with 2 volumes H₂O. (Note 1)
7. ____ For application transfer to a 250 ml spray flask (Kontes), then spray lightly and uniformly across TLC sheets. (Note 2)

Notes

- (1) The final solution should be greenish yellow. Too little water will result in a blue solution, while too much will render it yellow.
- (2) Phosphate esters will be visualized as blue spots on a light blue-gray background, but after ~1 hour the background will darken to obscure any bands. Scan shortly after visualization for a permanent record.