Carolina™ Solution Sheets

Barfoed's Reagent

Learn how to make Barfoed's reagent and how it is used to detect and differentiate sugars.

Materials

Distilled Water (item #858621)
Copper Acetate
Lactic Acid
Stir Bar (item #701091)
Amber Bottle
Magnetic Stir Plate (item #701023)
Erlenmeyer Flask, 500-mL (item #731030)
Label
Boiling Chips (item #848280)

Don't want to make it yourself?
Find Barfoed's reagent at Carolina.com

Item Number
846625

Procedure

1. Dissolve 24 g of copper acetate in 450 mL of boiling water. If a precipitate forms, do not filter.
2. Add 25 mL of 8.5% lactic acid to the hot solution.
3. Shake so that almost all of the precipitate dissolves.
4. Cool the solution and dilute to 500 mL.
5. Filter off all impurities.

Notes

- It is important to add the lactic acid immediately after step 1.
- Barfoed's reagent does not have a long shelf life; therefore, it is important to prepare it as needed.

Label Information

Barfoed's Reagent, Laboratory Grade
Date Prepared: _____
Initials of Preparer: _____
Health Risk: 1
Flammability: 0
Reactivity: 1

Applications

Barfoed's reagent is used to detect the presence of monosaccharide carbohydrates. It is based on copper acetate reduction to copper oxide and red precipitate formation. This reduction will occur quickly for monosaccharides and slowly for disaccharides. Thus, the rate of the reaction is used to determine the properties of the carbohydrate.

Reference

Brandwein, P. F., and E. Morholt. 1986. *A sourcebook for the biological sciences*, 3rd ed. Orlando, FL: Harcourt Brace Jovanovich, 1986, p. 177.