

# Benedict's Solution (qualitative)

Learn how to make qualitative Benedict's solution and how it is used to detect simple sugars.

## Materials

Distilled Water (item #858621)  
Sodium Citrate (item #889060)  
Copper(II) Sulfate (item #856589)  
Sodium Carbonate (item #888770)  
Stir Bar  
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 Benedict's solution at Carolina.com

**Item Numbers**  
847111, 847115, 847113, 847121

## Procedure

1. Dissolve sodium carbonate (100.0 g) and sodium citrate (173.0 g) in 800 mL of water, followed by mild heating.
2. Filter the solution.
3. Dissolve 17.3 g of copper(II) sulfate in 100 mL of water and pour into the first solution.
4. Stir appropriately and then add distilled water for a total volume of 1 L.

## Notes

- Useful for qualitative analysis only, not quantitative.

## Label Information

### Benedict's Solution, Qualitative

Date Prepared: \_\_\_\_\_  
Initials of Preparer: \_\_\_\_\_  
Health Risk: 1  
Flammability: 0  
Reactivity: 1

## Applications

Benedict's solution is used to test the presence of simple sugars (mainly glucose) in food, blood, and urine. If a simple sugar is present, a yellow or reddish precipitate of cuprous oxide will be present after the solution is heated with the unknown.

## Reference

Brandwein, P. F., and E. Morholt. 1986. *A sourcebook for the biological sciences*, 3rd ed. Orlando, FL: Harcourt Brace Jovanovich, 1986, pp. 741–2.