

Vanishing Valentine

Colorless solution that turns pink when shaken

Chemicals and Equipment Needed

- d-H₂O
- 1 M NaOH – **S1**
- 0.1% resazurin solution – **N1**
- Dextrose (glucose) – **N3**
- 500 mL Erlenmeyer flask – **P1**
- Stopper – **U3**
- Plastic transfer pipette – **U1 or top of K**

Preparation

- No more than 30 min before class: Weigh out 2.4 g dextrose and add to the flask. Add enough d-H₂O to make 100 mL solution, then add 100 mL 1 M NaOH.
- No more than 10 min before class: Add 8 drops of resazurin solution with the transfer pipette. Stopper and swirl the flask. The solution will be blue initially, but left undisturbed it will slowly turn colorless. This should take 3-5 min, but may take up to ten.
- Don't add the dye too early. The color change is only effective for about an hour. If the solution has turned yellowish, you must remake it.

Presentation

- Swirl the flask, and it will turn pink for Valentine's Day.
- Let the flask sit undisturbed, and it will turn colorless again. Swirl to bring back the pink color.
 - This cycle may be repeated as often as desired, but the pink color will start to fade over time.

Discussion

- Dextrose irreversibly reduces resazurin to resorufin. The red resorufin molecule is further (reversibly) reduced to colorless dihydroresorufin. Dihydroresorufin may be oxidized back to resorufin (pink) by swirling the flask to introduce oxygen from the air into the solution.

Clean-Up

- Flush down the drain with plenty of water.

NOTES:

- The resazurin dye keeps for a year, but this means you wind up having to make new solution every year just for this demo.
- To make 0.1% solution: measure out 0.1g solid resazurin (**N1**), add 100 mL water and pour into large stock bottle (also **N1**)

Acknowledgement: We got this demo from an article on About.com, written by Anne Marie Helmenstine