

Successful Solutions

Summary

Students will accurately prepare two solutions and use them to perform a Briggs-Raucher (starch-iodine) reaction

Time Frame

1 class periods of 90 minutes each

Group Size

Small Groups

Materials

- [student instructions/worksheet](#)
(attached)
malonic acid ($\text{CH}_2(\text{COOH})_2$),
manganese sulfate ($\text{MnSO}_4 \cdot \text{H}_2\text{O}$)
2.0 M sulfuric acid.
potassium iodate (KIO_3)
3.6 M hydrogen peroxide (H_2O_2) (previously prepared by teacher)
3% [w/v] starch in a dropper bottle (previously prepared by teacher)
glassware-beakers, graduated cylinders
balance

Background for Teachers

Safety considerations:

Safety goggles and standard handling procedures for acids are needed.

Student Prior Knowledge

Students should know how to measure carefully with a balance and how to calculate molar concentration.

Instructional Procedures

Read the instructions with students and assign the calculations. Depending on the skill of your students, you may wish to check the calculations before they begin. Any mistakes could be corrected before an incorrect amount of chemical is used.

Allow students to make the solutions and create their data tables. Remind them that observations are also data.

As students begin their own tests, some may design solutions that do not actually work at least in the time frame of a class. You may wish to allow them to try again or just listen as their classmates describe more successful experiences.

Bibliography

Lesson Design by Jordan School District Teachers and Staff.
Adapted from Wang, R.M J Chem Educ. 2000 77, 249-250

Authors

