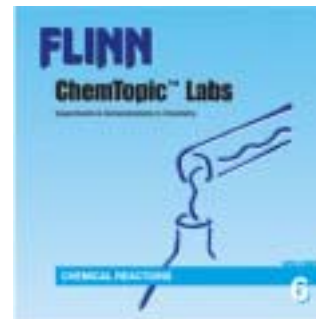


Chemical Reactions— Demonstration Summaries and Concepts



Colorful Electrolysis—Decomposition of Water

Demonstrate the electrolysis of water in simple but colorful fashion on an overhead projector using just a 9-volt battery and alligator clips. No need for expensive power supplies or fancy glassware. Color changes produced in universal indicator solution reveal the different pH conditions that develop at the anode and cathode as the decomposition reaction takes place.

The Chef—A Chemical Reaction that Really Cooks

Liven up your lesson plan on chemical reactions with this fun demonstration of chemical and culinary wizardry! Would you believe the amount of heat produced when water is added to calcium oxide is enough to fry an egg? This demonstration provides an ideal introduction to chemical reactions, combination reactions, and heats of reaction.

Foiled Again!—Single Replacement Reaction

Watch aluminum foil disappear when it is added to a solution of copper(II) chloride. Observe color changes, production of a gas, formation of a new solid, and a huge temperature increase. The ever-changing conditions in this demonstration of a “simple” chemical reaction will help your students practice the art and skill of laboratory observation.

The Yellow and Blue Switcheroo—An Oscillating Chemical Reaction

You have spent weeks analyzing and classifying chemical reactions and your students have seen it all. Guess again! Mixing three colorless solutions generates a yellow product, which then slowly fades and changes to blue. But wait a minute—it’s back to yellow again. And then back to blue! The yellow–blue color changes will continue to oscillate for about 15 minutes. If you have never performed an oscillating reaction for your students, don’t pass this one up.

Old Foamey—Decomposition of Hydrogen Peroxide

Bubbles and heat, foam and steam, “Old Foamey” has it all! Mix hydrogen peroxide with dishwashing liquid, add sodium iodide catalyst, then stand back and marvel as the decomposition reaction erupts in a cascade of steaming foam.

Cool Light—Chemiluminescence Reaction

A wire glows, a candle burns—the production of light and heat are common to many chemical reactions. But when light is produced without heat, that’s cool! Actually, it’s called “cool light,” and the oxidation of luminol using hydrogen peroxide provides a classic demonstration of this amazing phenomenon.

Concepts

- Decomposition reaction
- Electrolysis
- Oxidation–reduction

- Combination reaction
- Exothermic reaction

- Single replacement reaction
- Metal activity
- Oxidation–reduction
- Catalysis

- Oscillating reactions
- Reaction mechanism

- Decomposition reaction
- Catalyst

- Chemiluminescence
- Oxidation–reduction