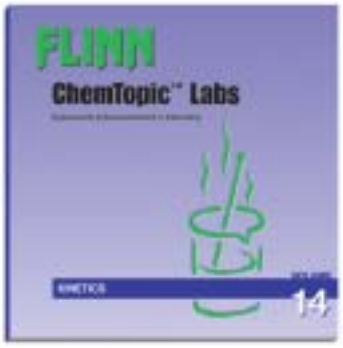
Kinetics—
Demonstration Summaries and Concepts



Iodine Clock Reaction—Effect of Concentration, Temperature, and a Catalyst

Mix a series of two colorless solutions and measure the time until they suddenly change from colorless to deep blue in quick succession. Use this popular iodine clock demonstration to examine the effects of concentration, temperature, and a catalyst on the rate of the reaction. The results make a clear and convincing case for the collision theory of reaction rates.

Concepts
- Reaction rate
- Catalyst
- Collision theory
- Iodine clock reaction

Now You See It, Now You Don't—Oscillating Chemical Reaction

Surprise your students with this demonstration of an oscillating chemical reaction. Add some white solids to a colorless solution and it quickly changes to orange. Less than a minute later, however, it's back to colorless. The color will continue to oscillate between colorless and orange every 30 seconds for half an hour! What causes the unusual behavior? Take advantage of this surprising reaction to help your students visualize abstract concepts related to the reaction mechanism and reaction intermediates.

- Reaction mechanism
- Reaction intermediate
- Catalyst
- Oscillating chemical reaction

Sudsy Kinetics—An "Old Foamey" Demonstration

It's sudsy, it's fun—it's chemical kinetics! Everyone loves the classic "Old Foamey" reaction of hydrogen peroxide. Now, you can also use this exciting demonstration to teach your students about chemical kinetics. How does changing the concentration of a reactant change the reaction rate? What does a catalyst do? Where does a reaction intermediate come from? Find the answers in the cascading foam of Sudsy Kinetics!

- Kinetics
- Decomposition reaction
- Reaction intermediate
- Catalyst

The Pink Catalyst—Chemical Demonstration

What does it take to oxidize a simple organic compound? Will mighty hydrogen peroxide do the trick? No—it takes a little pink catalyst! Even strong and mighty chemical reactions sometimes need a little boost from a catalyst to get them going. Learn the tricks of the catalyst trade by studying the color changes of the pink catalyst. You'll see the catalyst as it gets swept up in the reaction pathway, change into something completely different, and then reappear again at the end as if nothing had happened.

- Kinetics
- Catalyst
- Reaction mechanism

The Floating Catalyst—An Enzyme Reaction Demonstration

Almost all chemical reactions that take place in living organisms are catalyzed by enzymes—nature's catalysts. A typical enzyme may make a chemical reaction occur about one million times faster than it would in the absence of a catalyst. Catalase, which breaks down hydrogen peroxide in plant and animal cells, is one of the most active known enzymes. Use this demonstration to show students that what they learn in chemistry lab applies to chemical reactions in living tissue, not just in test tubes.

- Catalyst
- Enzyme
- Reaction rate
- Concentration

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