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Let's make a chemical clock

Activity 1: Worksheet

Why does iodine immediately turn colourless in the presence of vitamin C?

Why can the oscillating mechanism only be noticed if the decomposition of hydrogen peroxide is catalysed by the iodide generated by the reaction with vitamin C and not by the iodide resulting from the dissociation of a salt?

Observe reaction (A): how can you prove that ascorbic acid is oxidised without calculating the formal charge of each atom?

Observe reaction (B): Why is it a hydrolysis reaction?

Perform the hydrogen peroxide decomposition reaction by adding potassium iodide. Since it acts as a catalyst, the iodide reforms. However, a small amount of molecular iodine is also produced. How can you detect this?

Repeat the procedure of the clock reaction using water at different temperatures. Report your observations in respect of the time you measured and try to formulate a hypothesis if there is a difference.

What is the difference between an equilibrium reaction and a clock reaction?

Give the definition of autocatalytic reaction and autoinhibitory mechanism.