FLINN SCIENTIFIC

Name_____

Fluorescent Oscillating Reaction Worksheet

Questions

1. Describe the observations in this oscillating chemical reaction.

2. This oscillating reaction involves two competing processes in which bromate ions are reduced. The first, Process A, occurs when the bromide ion concentration is low and the second, Process B, occurs when the bromide concentration is high. Write the chemical equation for the following steps in both processes.

   a. Process A, Part 1. Bromate ions are reduced to bromine and water by the ruthenium(II) complex ions in the presence of hydrogen ions.

   b. Process B, Part 1. Bromate ions are reduced to bromine and water by bromide ions in the presence of hydrogen ions.

3. Write the equation for the overall chemical reaction of malonic acid and bromate ions to produce bromide ions, carbon dioxide, and water.