

Pink and Blue: A Colorful Chemical Balancing Act Demonstration Worksheet

Discussion Questions

- Describe what you observed at the following stages in this demonstration:
 - Adding HCl to the originally pink solution (P2)
 - Adding distilled water to the originally pink solution (P2)
 - Placing the originally pink solution in a hot water bath (P2)
 - Placing the originally pink solution in a cold water bath (P2)
 - Adding silver nitrate to the originally blue solution (B2)
- Write the chemical equation for this reaction, in which complex ions form between Co^{2+} and either water molecules or chloride ions. *Hint:* Heat is a reactant.
- Using the equation you just wrote and what you observed during the demonstration, indicate whether the following steps shift the reaction to the left or the right.
 - Adding HCl
 - Adding distilled water
 - Placing the solution in a hot water bath
- The addition of silver nitrate to the blue solution of CoCl_4^{2-} results in the formation of a white precipitate and a pink solution. Identify both the precipitate and the solution.