

Work Sheet 8+

CH302 Spring 2008

1.

A solution is made with NaI and NaCl such that it is 0.01 M in both I⁻ and Cl⁻. To 1 L of this solution 0.01 moles Cu(NO₃) are added (you can ignore any volume change). The NaI, NaCl, and Cu(NO₃) are completely soluble (as is NaNO₃ but you already knew that). The K_{sp} for CuI is 1.3 x 10⁻¹² and for CuCl is 1.0 x 10⁻⁶.

After the solution has reached equilibrium what are the concentrations of the following?

[Cu⁺]

[I⁻]

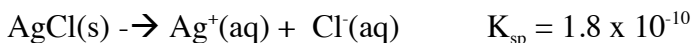
[Cl⁻]

Are there any solid precipitates? If so how many grams of each.

2. The K_{sp} of PbCl₂ is 1.7 x 10⁻⁵. How many grams of PbCl₂ will dissolve in 100 mL of a 0.1 M NaCl solution?

3. Will CaF₂ be more soluble in acid or base?

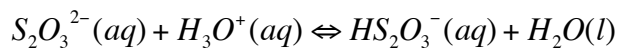
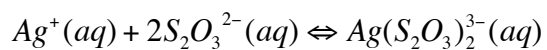
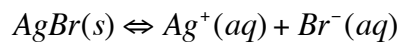
4. Consider the following reactions



You a saturated solution of AgCN, what will the effect of each of the following (nothing, more AgCN dissolves, some AgCN precipitates)

- A. Adding NaCl
- B. Adding HCl
- C. Adding HNO₃
- D. Adding KCN
- E. Adding KNO₃

5. A blast from the past



What is the effect of each of these on the solubility of AgBr(s)

1. Adding the soluble salt KBr
2. Adding the soluble salt Na₂S₂O₃
3. Adding HCl
4. Adding solid AgBr