

Chemistry 120 ... Winter 2010

Problem Set #2

R.J. Le Roy

Due: Monday, January 25

Submit STAPLED Solutions in Class *or* to my office (ESC-332) by 5:00 PM

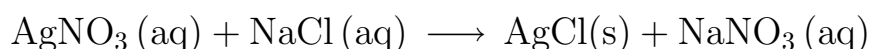
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- *Atomic masses should be taken from the table on the inner cover of the textbook.*
  - Pay attention to significant digits!
  - ***Solutions should be written/printed on only one side of the paper. The markers have the discretion to deduct marks for disorganized and/or messy work which is hard to read.***
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{Questions taken from the Lecture Notes for Chapters 5.}

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**Exercise 4.** Consider the precipitation reaction:



(a) Write the net ionic equation.

If 350 mL of 1.30 M  $\text{AgNO}_3(\text{aq})$  solution are added to 250 mL of 2.40 M  $\text{NaCl}(\text{aq})$  solution:

(b) How many grams of  $\text{AgCl}(\text{s})$  are formed?

(c) What are the final concentrations of all species remaining in solution?

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**Exercise 5.** What volume of a 0.234 M solution of  $\text{Ba}(\text{OH})_2$  would be required to precisely neutralize 750.0 mL of a 0.7532 M solution of the weak acid  $\text{CH}_3\text{COO-H}$ ?

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**Exercise 6.** A 10.00 mL sample of stock phosphoric acid solution  $\text{H}_3\text{PO}_4(\text{aq})$  is diluted to 50.00 mL, and then titrated with a known KOH solution. If 55.58 mL of that 1.554 M  $\text{KOH}(\text{aq})$  solution is required to neutralize all of the acid, what was the molarity of the original  $\text{H}_3\text{PO}_4(\text{aq})$  solution?

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**Exercise 9.** Complete and balance the equations:

