Chemistry 12

Solubility Calculations Worksheet

Name:
Date:
Block:

1. 5.62g of Na_2SO_4 is dissolved in enough water to make 750.0 mL of solution.
   a. Calculate the $[Na_2SO_4]$.

   b. Calculate the $[Na^+]$.

2. 250.0mL of water are added to 600.0mL of a 6.0M HCl solution. Calculate the final [HCl].

3. Calculate the mass of K_2CrO_4 needed to make 3.00L of a 0.0200M solution.

4. 150.0 mL of a 0.400 M solution of $Mg(NO_3)_2$ is diluted to a volume of 500.0 mL by adding water. Calculate the final nitrate ion concentration.

5. What volume if 0.250M $NaNO_3$ solution needs to be evaporated in order to produce 68.0 grams of solid $NaNO_3$?

6. The concentration of chloride ion, $[Cl^-]$ in a solution of aluminum chloride is 0.99M. Calculate the $[Al^{3+}]$ in the same solution.

7. 400.0 mL of 0.200 M Li_3PO_4 is mixed with 200.0 mL of 0.250 M Na_2CO_3. Calculate the final concentration of all four ions in the final mixture.

8. 300.0 mL of 0.100M Li_3PO_4 is mixed with 500.0 mL of 0.050M Li_2CO_3. Calculate the final concentration of all three ions in the final mixture.

9. Calculate the volume of 12.0 M Na_2SO_3 which needs to be added to 500.0 mL of water in order to produce a solution in which $[Na^+] = 0.200M$

10. The molar solubility of calcium sulphate is 8.43×10^{-3} M. Calculate the mass of solid calcium sulphate which can be evaporated from 250.0 mL solution of calcium sulphate.

11. It is found that 13.01g is the maximum mass of $PbCl_2$ which will dissolve in 3.0L of solution. Use this information to calculate the concentration of $PbCl_2$.

12. The concentration of silver iodate ($AgIO_3$) is 1.79×10^{-4}M. Calculate the mass of silver iodate that can be dissolved in 650 mL of water.