

/25

Name: _____

Blk: _____ Date: _____

Chemistry 12

Titration and Altering the Solubility of a Saturated Solution Assignment

1. Three trial titrations performed with 25.0 mL of Potassium chloride with 0.200 M silver nitrate were conducted and the following data was collected:

	Trial 1	Trial 2	Trial 3
Initial volume AgNO ₃ (burette reading)	0.00 mL	5.26 mL	12.19 mL
Final volume AgNO ₃ (burette reading)	5.26 mL	12.19 mL	17.43 mL
Volume AgNO ₃ used:			

Use this information to calculate the [Cl⁻] in the KCl solution (5 marks)

2. a. Fill in the following table showing the effects of adding the following substances to a saturated solution of Magnesium hydroxide: $\text{Mg(OH)}_2 (\text{s}) + \text{heat} \rightleftharpoons \text{Mg}^{2+} (\text{aq}) + 2 \text{OH}^- (\text{aq})$ (7 marks)

Added to the solution	Initial change in:		Equilibrium would shift:	Solubility of Mg(OH)_2 would	Effect on K_{sp}
	$[\text{Mg}^{2+}]$	$[\text{OH}^-]$			
RbOH					
K_2CO_3					
$\text{Ca(NO}_3)_2$					
heat					
$\text{Mg(NO}_3)_2$					
HNO_3					
Mg(OH)_2					

- b. Use a [] vs time graph to depict what happens to the above saturated solution equilibrium when you the following are added: (3 marks)

i. RbOH

ii heat

iii. HNO_3

3. a. Fill in the following table showing the effects of adding the following substances to a saturated solution of Copper I Iodide: $\text{CuI (s)} + \text{heat} \rightleftharpoons \text{Cu}^{1+} \text{ (aq)} + \text{I}^{-} \text{ (aq)}$
(7 marks)

Added to the solution	Initial change in:		Equilibrium would shift:	Solubility of CuI would	Effect on K_{sp}
	$[\text{Cu}^{1+}]$	$[\text{I}^{-}]$			
RbOH					
AgNO ₃					
HNO ₃					
Ice					
CuNO ₃					
Nal					
CuI					

- b. Use a [] vs time graph to depict what happens to the above saturated solution equilibrium when you the following are added: (3 marks)

i. AgNO₃

ii Ice

iii. Nal