**Chemistry 3.6 AS 91392** Demonstrate understanding of equilibrium principles in aqueous systems



Writing Excellence answers to **Solubility and Equilibrium** questions

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| **Solubility and Equilibrium QUESTION** |
| **Question:** The solubility of zinc hydroxide, Zn(OH)2, can be altered by changes in pH. Some changes in pH may lead to the formation of complex ions, such as the zincate ion, [Zn(OH)4]2– Use equilibrium principles to explain why the solubility of zinc hydroxide increases when the pH is less than 4 or greater than 10.   |
| **ANSWER** |
| **1.** write the **equation** for the dissociation of salt  |  |
| **2**. Explain that OH- ions are formed during dissociation |  |
| **3.** write the **equation** for the reaction of H3O+ ions + OH- ions when adding acid (due to pH being less than 4)  |  |
| **4**. link removal of OH- ions (product) to **equilibrium** shifting AND change in solubility |  |
| **5.** write the **equation** for the formation of the complex ion [Zn(OH)4]2– withexcess OH- ions (due to pH being greater than 10) |  |
| **6.** link removal of OH- ions (product) to **equilibrium** shifting AND change in solubility |  |

NOTE: The white column is how your answer would appear on your test paper so make sure you **write out complete sentences**. The grey area is just to help you structure your answer and would not appear in the question.