

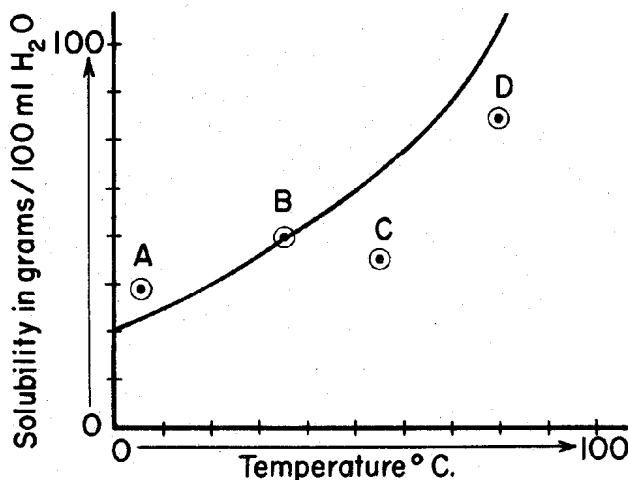
## Solubility Curves

- \_\_\_\_\_ 1. Which compound is least soluble in water at 60. °C?
- A)  $\text{KClO}_3$                       B)  $\text{KNO}_3$   
C)  $\text{NaCl}$                          D)  $\text{NH}_4\text{Cl}$
- \_\_\_\_\_ 2. An unsaturated aqueous solution of  $\text{NH}_3$  is at 90°C in 100. grams of water. According to Reference Table G, how many grams of  $\text{NH}_3$  could this unsaturated solution contain?
- A) 5 g                              B) 10. g  
C) 15 g                             D) 20. g
- \_\_\_\_\_ 3. According to your Reference Tables, which substance forms an unsaturated solution when 80 grams of the substance is dissolved in 100 grams of  $\text{H}_2\text{O}$  at 10°C?
- A)  $\text{KI}$                               B)  $\text{KNO}_3$   
C)  $\text{NaNO}_3$                         D)  $\text{NaCl}$
- \_\_\_\_\_ 4. According to Reference Table G, which of these substances is most soluble at 60°C?
- A)  $\text{NaCl}$                             B)  $\text{KCl}$   
C)  $\text{KClO}_3$                          D)  $\text{NH}_4\text{Cl}$
- \_\_\_\_\_ 5. According to Reference Table G, how many grams of  $\text{KNO}_3$  would be needed to saturate 200 grams of water at 70°C?
- A) 43 g                              B) 86 g  
C) 134 g                             D) 268 g
- \_\_\_\_\_ 6. Based on Reference Table G, what change will cause the solubility of  $\text{KNO}_3(\text{s})$  to increase?
- A) decreasing the pressure  
B) increasing the pressure  
C) decreasing the temperature  
D) increasing the temperature
- \_\_\_\_\_ 7. According to Reference Table G, which compound's solubility decreases most rapidly when the temperature increases from 50°C to 70°C?
- A)  $\text{NH}_3$                             B)  $\text{HCl}$   
C)  $\text{SO}_2$                              D)  $\text{KNO}_3$
- \_\_\_\_\_ 8. According to Reference Table G, how does a decrease in temperature from 40°C to 20°C affect the solubility of  $\text{NH}_3$  and  $\text{KCl}$ ?
- A) The solubility of  $\text{NH}_3$  decreases, and the solubility of  $\text{KCl}$  decreases.  
B) The solubility of  $\text{NH}_3$  decreases, and the solubility of  $\text{KCl}$  increases.  
C) The solubility of  $\text{NH}_3$  increases, and the solubility of  $\text{KCl}$  decreases.  
D) The solubility of  $\text{NH}_3$  increases, and the solubility of  $\text{KCl}$  increases.
- \_\_\_\_\_ 9. Which of the salts listed below is most soluble at 60°C?
- A)  $\text{NaNO}_3$                          B)  $\text{KNO}_3$   
C)  $\text{NH}_4\text{Cl}$                          D)  $\text{KCl}$
- \_\_\_\_\_ 10. Based on Reference Table G, which of the following substances is most soluble at 50°C?
- A)  $\text{KClO}_3$                          B)  $\text{NH}_3$   
C)  $\text{NaCl}$                             D)  $\text{NH}_4\text{Cl}$
- \_\_\_\_\_ 11. Which compound becomes less soluble in water as the temperature of the solution is increased?
- A)  $\text{HCl}$                              B)  $\text{KCl}$   
C)  $\text{NaCl}$                             D)  $\text{NH}_4\text{Cl}$

12. According to Reference Table G, what is the approximate difference between the amounts of  $\text{KClO}_3$  and  $\text{KNO}_3$  soluble in 100 grams of water at  $40^\circ\text{C}$ ?

- A) 17 g                      B) 22 g  
C) 47 g                      D) 64 g

13. Base your answer to the following question on the diagram below which represents the solubility curve of salt X. The four points on the diagram represent four solutions of salt X.



Which point represents the most concentrated solution of salt X?

- A) A    B) B    C) C    D) D

14. According to Reference Table G, which of the following substances is least soluble in 100 grams of water at  $50^\circ\text{C}$ ?

- A)  $\text{NaCl}$                       B)  $\text{KCl}$   
C)  $\text{NH}_4\text{Cl}$                       D)  $\text{HCl}$

15. Which compound decreases in solubility as the temperature of the solution is increased from  $10^\circ\text{C}$  to  $50^\circ\text{C}$ ?

- A)  $\text{NH}_4\text{Cl}$                       B)  $\text{NaCl}$   
C)  $\text{NH}_3$                       D)  $\text{NaNO}_3$