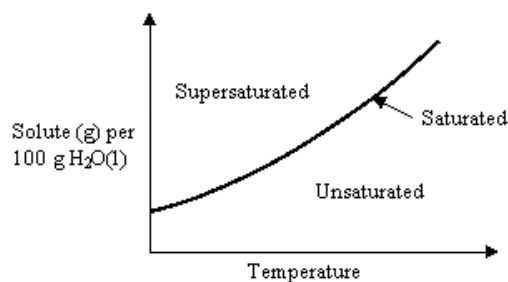
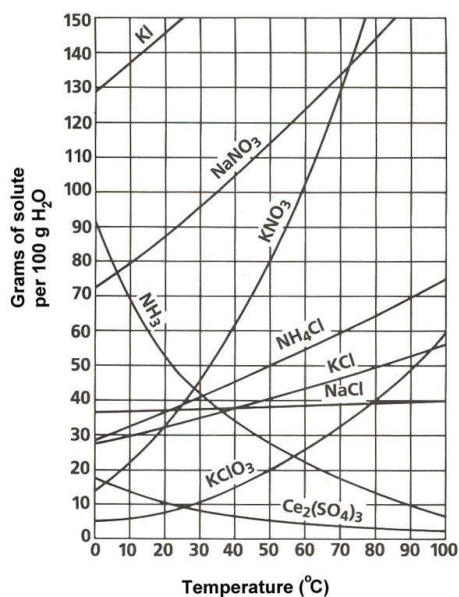


EXTRA PRACTICE: Interpreting Solubility Curves Practice #2

Name: _____



- Which of the substances shown on the graph is the least soluble in water at 10.0 °C? → _____
- Which of the substances shown on the graph has the greatest increase in solubility as the temperature increases from 30.0 °C to 60.0 °C?
- Which of the substances have its solubility affected the least by a change in temperature from 0.00 °C to 100. °C? → _____
- At 20.0 °C, a saturated solution of sodium nitrate contains 88.0 grams of solute in 100. mL of water. How many grams of sodium nitrate must be added to saturate the solution at 50.0 °C?
- At what temperature do saturated solutions of potassium nitrate and sodium nitrate contain the same weight of solute per 100. mL of water?
- What TWO substances have the same degree of solubility at approximately 19.0 °C? → _____ and _____
- Calculate the Molarity (*M*) of a saturated solution of ammonium chloride at 90.0 °C.
- A saturated solution of potassium nitrate is prepared at 60.0 °C using 100. mL of water. How many grams of solute will precipitate out of solution if the temperature is suddenly cooled down to 30.0 °C?

9. What is the smallest volume of water, in mL, required to completely dissolve 39.0 grams of KNO_3 at $10.0\text{ }^\circ\text{C}$?
10. What is the lowest temperature at which 30.0 grams of KCl can be dissolved in 100. mL of water?
11. Are the following solutions saturated, unsaturated or supersaturated (assume that all three could form supersaturated solutions)
- a. 40.0 g of KCl in 100. mL of water at $80.0\text{ }^\circ\text{C}$ _____
 - b. 120. g of KNO_3 in 100. mL of water at $60.0\text{ }^\circ\text{C}$ _____
 - c. 80.0 g of NaNO_3 in 100. mL of water at $10.0\text{ }^\circ\text{C}$ _____
12. Assume that a solubility curve for a gas such as methane gas (CH_4), at one atmosphere of pressure (1 atm), was plotted on the solubility curve graph. Reading from left to right, this curve would _____.
- A. slope upward B. slope downward C. go straight across
13. At $30.0\text{ }^\circ\text{C}$, 90.0 g of sodium nitrate is dissolved in 100. g of water. Is this solution saturated, unsaturated, or supersaturated? Explain why.
14. What TWO substances show a decrease in solubility from $0.00\text{ }^\circ\text{C}$ to $100.\text{ }^\circ\text{C}$? \rightarrow _____ and _____
15. Which salt compound is **MOST** soluble at $10.0\text{ }^\circ\text{C}$? **Explain why.** \rightarrow _____
16. Which salt compound is **LEAST** soluble at $50.0\text{ }^\circ\text{C}$? **Explain why.** \rightarrow _____
17. Which substance is **LEAST** soluble at $90.0\text{ }^\circ\text{C}$? **Explain why.** \rightarrow _____
18. At $40.0\text{ }^\circ\text{C}$, how many grams of potassium nitrate can be dissolved in 300. grams of water?
19. At what temperature would you need 100. g of water to dissolve 70.0 grams of NH_4Cl ? \rightarrow _____
20. A solution that holds 40.0 grams of KCl at $10.0\text{ }^\circ\text{C}$ can be described as what kind of solution? (saturated, unsaturated, or supersaturated) **Explain why.**