

Solubility Curve Worksheet

- 1) Define solubility.

- 2) Look at the graph below. In general, how does temperature affect solubility?

- 3) Which compound is LEAST soluble at 10 °C? _____
- 4) How many grams of KCl can be dissolved in 100g of water at 80°C? _____
- 5) How many grams of NaCl can be dissolved in 100g of water at 90°C? _____
- 6) At 40°C, how much KNO₃ can be dissolved in 100g of water? _____
- 7) Which compound shows the least amount of change in solubility from 0°C-100°C?

- 8) At 30°C, 90g of NaNO₃ is dissolved in 100g of water. Is this solution saturated or unsaturated?

- 9) At 60°C, 72g of NH₄Cl is dissolved in 100g of water. Is this solution saturated or unsaturated?

- 10) A saturated solution of KClO₃ is formed from one hundred grams of water. If the saturated solution is cooled from 90°C to 50°C, how many grams of precipitate are formed? _____

- 11) A saturated solution of NH₄Cl is formed from one hundred grams of water. If the saturated solution is cooled from 80°C to 40°C, how many grams of precipitate are formed? _____

- 12) Which compounds show a *decrease* in solubility from 0°C-100°C?

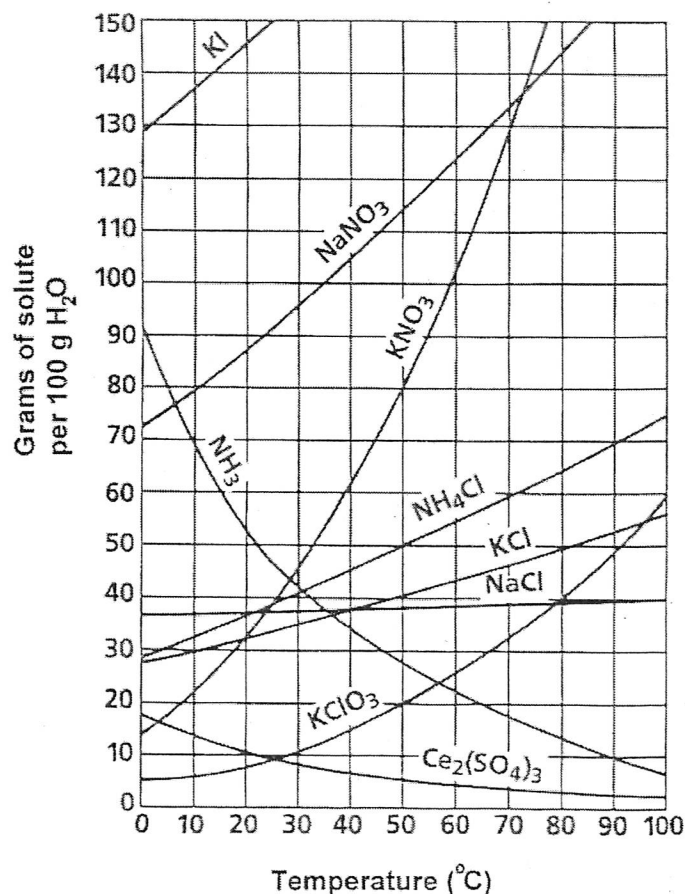
- 13) Which compound is the most soluble at 10°C?

- 14) Which compound (besides Ce₂(SO₄)₃) is the least soluble at 50°C? _____

- 15) For each of the following solutions, explain how much of the solute will dissolve and how much will remain undissolved at the bottom of the test tube?

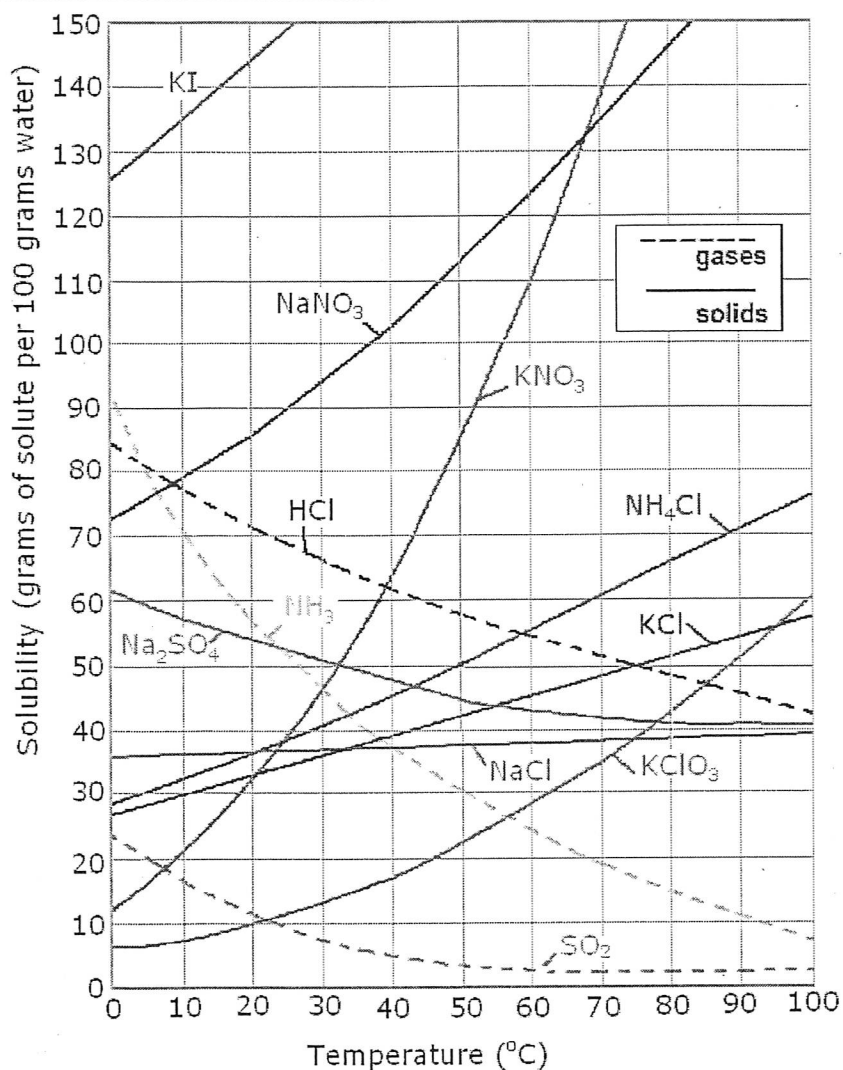
a) 120 g of KCl in 100 g of water at 80°C

b) 130 g of NaNO₃ in 100 g of water at 50°C



UNIT 12 - SOLUTIONS

SOLUBILITY CURVES WORKSHEET



- 1.) Which compound is *least* soluble at 20 °C? At 80 °C?
- 2.) Which substance is the *most* soluble at 10 °C? At 50 °C? At 90 °C?
- 3.) The solubility of which substance is *most* affected by changes in temperature?
- 4.) The solubility of which substance is *least* affected by changes in temperature?
- 5.) Are the following solutions saturated, unsaturated, or supersaturated?
(Assume all are dissolved in 100 grams of water.)
 - (A) 50 grams of KNO₃ at 50 °C
 - (B) 100 grams of NaNO₃ at 80 °C
 - (C) 30 grams of KNO₃ at 25 °C
 - (D) 50 grams of KCl at 80 °C
 - (E) 65 grams of NH₄Cl at 70 °C
 - (F) 90 grams of KNO₃ at 60 °C
- 6.) NH₃ is a gas. Describe what happens to its solubility as the temperature goes from 20 °C to 80 °C.