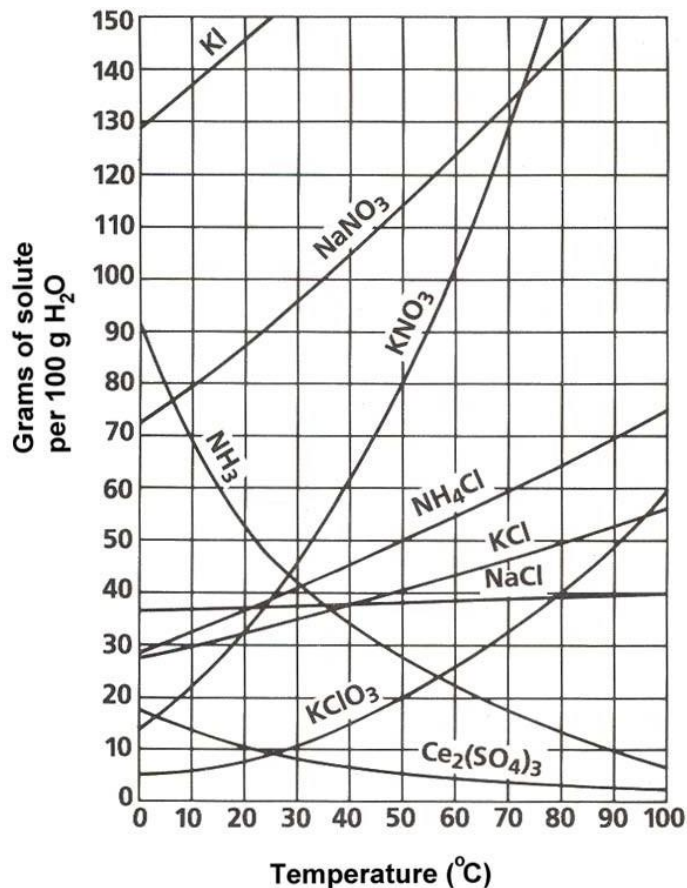


NAME:  
DATE: Oct. 1, 2020

## 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 KNO<sub>3</sub> 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 NaNO<sub>3</sub> is dissolved in 100g of water. Is this solution saturated or unsaturated?  
\_\_\_\_\_
- 9) At 60°C, 72g of NH<sub>4</sub>Cl is dissolved in 100g of water. Is this solution saturated or unsaturated?  
\_\_\_\_\_
- 10) A saturated solution of KClO<sub>3</sub> 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 NH<sub>4</sub>Cl 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 Ce<sub>2</sub>(SO<sub>4</sub>)<sub>3</sub>) 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 NaNO<sub>3</sub> in 100 g of water at 50°C  
\_\_\_\_\_  
\_\_\_\_\_



16) When does solution equilibrium occur?

17) What are the differences between a saturated solution, unsaturated solution and a supersaturated solution?

18) How could you tell by looking at a solution that it was saturated?

□ Use the solubility curve below to answer the following questions:

19) Which salt is LEAST soluble at 20 °C? \_\_\_\_\_

20) How many grams of KBr can be dissolved in 100g of water at 60°C? \_\_\_\_\_

21) How many grams of NaCl can be dissolved in 100g of water at 100°C? \_\_\_\_\_

22) At 40°C, 180g of NaClO<sub>3</sub> is dissolved in 100g of water. Is this solution saturated or unsaturated?  
\_\_\_\_\_

23) At 70°C, 70g of KBr is dissolved in 100g of water. Is this solution saturated or unsaturated?  
\_\_\_\_\_

24) A saturated solution of NaClO<sub>3</sub> is formed from one hundred grams of water. If the saturated solution is cooled from 80°C to 60°C, how many grams of precipitate are formed? \_\_\_\_\_

25) How much of the solute will dissolve and how much will remain undissolved at the bottom of the test tube?

a) 160 g of KNO<sub>3</sub> in 100 g of water at 50°C

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