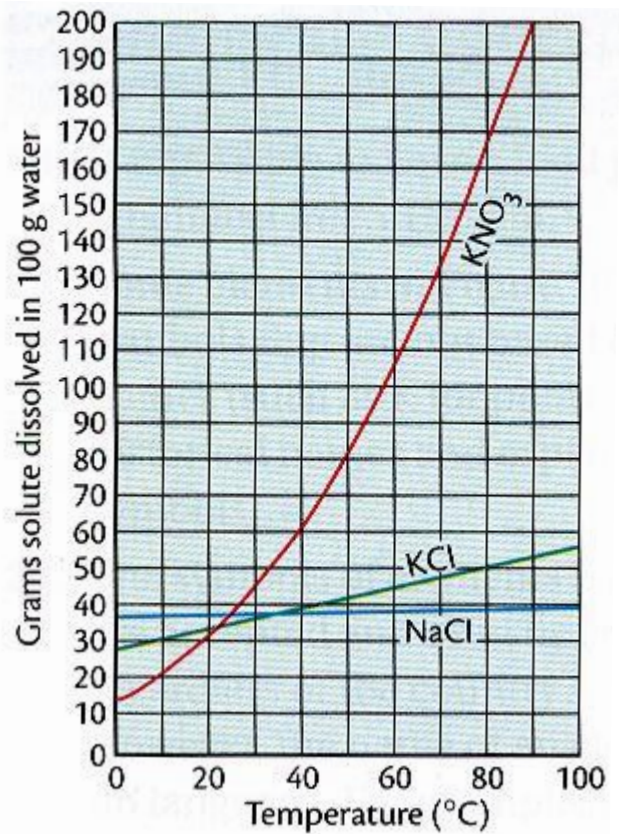


Solubility Curves

Name _____

- 1) At what temperature will the solubility of potassium nitrate be 25 g per 100 g water?
- 2) How much potassium nitrate will dissolve in 100 g water at 40°C?
- 3) What mass (in grams) of potassium nitrate (KNO_3) will dissolve in 100 g water at 60°C?
- 4) What mass (in grams) of potassium chloride (KCl) will dissolve in 100 g water at 60°C?
- 5) You dissolve 25 g potassium nitrate in 100 g water at 30°C, producing an unsaturated solution. How much more potassium nitrate (in grams) must be added to form a saturated solution at 30°C?



- 6) What is the minimum mass (in grams) of 30°C water needed to dissolve 25 g potassium nitrate?
- 7) You place 50 g NaCl in 100 g water at 30°C.
 - a) Classify the solution as unsaturated or saturated.
 - b) Of the 50 g NaCl, about what mass will dissolve?
 - c) Describe what you would see in the beaker.
- 8) At 80°C, more KCl can dissolve in 100 g of water than at 10°C. How many more grams of KCl can dissolve in the warmer water than the colder water?

9a) At what temperature could you dissolve 30 grams of potassium chloride in 100 grams of water?

b) What temperature would you need 100 grams of water to be at in order to dissolve 95 grams of potassium nitrate?

10a) At 90 °C, how many grams of sodium chloride would you be able to dissolve in 100 grams of water?

b) Suppose you doubled the amount of water to 200 g. How many grams of sodium chloride would now be able to be dissolved?

c) Suppose you cut the amount of water down to 50 grams. How many grams of sodium chloride would be able to dissolve now?

11) How many grams of KNO₃ would dissolve in 400 grams of 75 °C water?

12) How many grams of KCl would dissolve in 25 grams of water at 10 °C?

13) Label the following combinations as saturated, unsaturated or supersaturated.

- a) 100 grams of KCl in 100 grams of water at 80 °C. b) 19 grams of NaCl in 100 grams of water at 20 °C. c) 80 grams of KNO₃ in 100 grams of water at 50 °C.

14) What type of solution would you have if 90 grams of NaCl were dissolved in 300 grams of water at 60 °C?