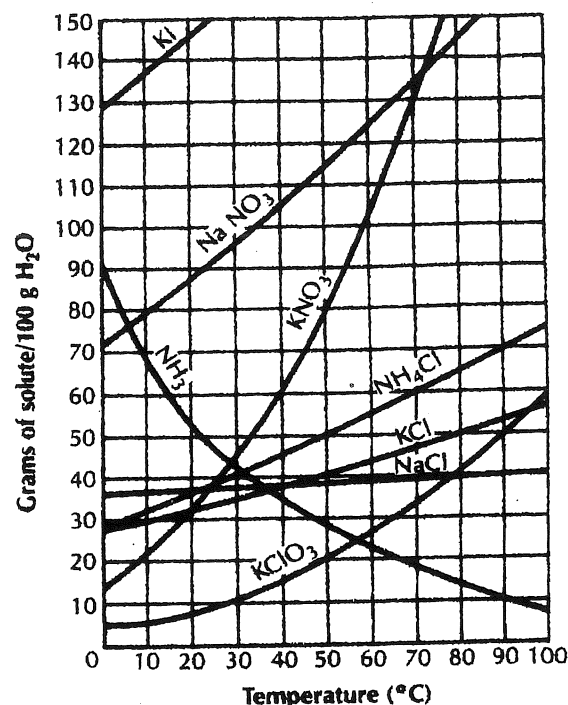


Solubility Curves

Study the solubility curves in the figure, and then answer the questions that follow.

- What relationship exists between solubility and temperature for most of the substances shown?
- What is the exception?
 - What general principle accounts for this exception?
- Approximately how many grams of NaNO_3 will dissolve in 100 g of water at 20°C ?
 - How many grams will dissolve at 60°C ?
- How many grams of NH_4Cl will dissolve in 1 liter of H_2O at 50°C ?
- Ninety grams of NaNO_3 is added to 100 g of H_2O at 0°C . With constant stirring, to what temperature must the solution be raised to produce a saturated solution with no solid NaNO_3 remaining?
- A saturated solution of KClO_3 was made with 300 g of H_2O at 40°C . How much KClO_3 could be recovered by evaporating the solution to dryness?
- Five hundred grams of water are used to make a saturated solution of KCl at 10°C . How many more grams of KCl could be dissolved if the temperature were raised to 100°C ?
- A saturated solution of KNO_3 in 200 g of H_2O at 50°C is cooled to 20°C . How much KNO_3 will precipitate out of solution?



- $T \uparrow$ Solub $\uparrow$
- NH_3
 - gas (NH_3 is a gas)
- 88 g NaNO_3
 - 125 g NaNO_3
- 500 g NH_4Cl
- 22°C
- 45 g KClO_3
- 125 g KCl
- 96 g KNO_3

SOLUBILITY CURVES

Name _____

Answer the following questions based on the solubility curve below.

1. Which salt is least soluble in water at 20° C? KClO₃

2. How many grams of potassium chloride can be dissolved in 200 g of water at 80° C? (KCl)

100g KCl

3. At 40° C, how much potassium nitrate can be dissolved in 300 g of water? 126g KNO₃ (KNO₃)

4. Which salt shows the least change in solubility from 0° - 100° C?

NaCl

5. At 30° C, 90 g of sodium nitrate is dissolved in 100 g of water. Is this solution saturated, unsaturated or supersaturated? (NaNO₃)

unsaturated

6. A saturated solution of potassium chlorate is formed from one hundred grams of water. If the saturated solution is cooled from 80° C to 50° C, how many grams of precipitate are formed? 20g KClO₃

7. What compound shows a decrease in solubility from 0° to 100° C? NH₃

8. Which salt is most soluble at 10° C? KI

9. Which salt is least soluble at 50° C? KClO₃

10. Which salt is least soluble at 90° C? NaCl (NH₃ is NOT a salt)

