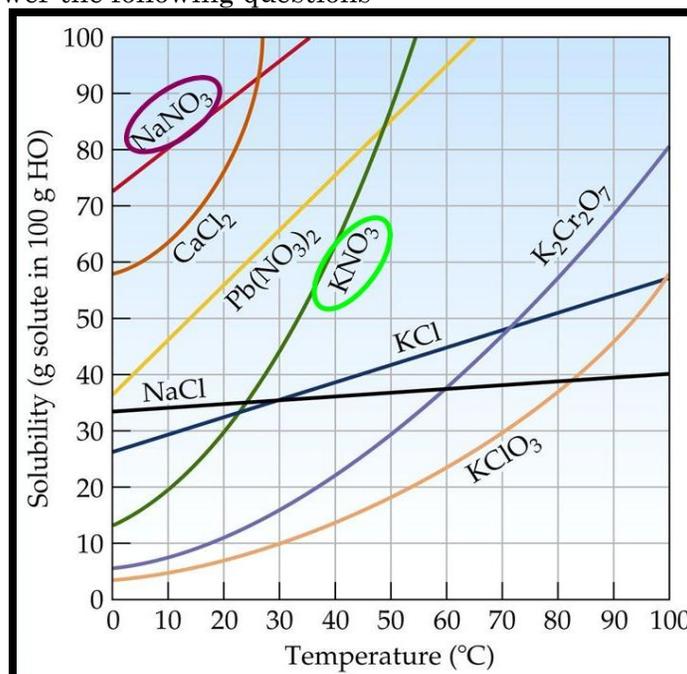


# CHEMISTRY For Senior 2

## HOME PACKAGE

Submission via email: [chemclement@gmail.com](mailto:chemclement@gmail.com) Max.: 25 marks

Use the graph below to answer the following questions



[Note: Assume that 1 g = 1 cm<sup>3</sup> = 1 mL]

### Question 1

(14 marks)

- (a) What is the approximate temperature at which the water must be to just dissolve;
- 80.0 g of potassium chloride in 200 cm<sup>3</sup> of water. (2 marks)
  - 60.0 g of potassium nitrate in 300 cm<sup>3</sup> of water. (2 marks)
  - 400.0 g of potassium dichromate in 500 cm<sup>3</sup> of water. (2 marks)
- (b) Calculate the minimum volume of water (in cm<sup>3</sup>) needed to dissolve;
- 500 g of sodium chloride in water at 100° C. (2 marks)
  - 9.5 g of lead nitrate in water at 60° C. (2 marks)
  - 730 g of sodium nitrate in water at 0° C. (2 marks)
- (c) The solubility of KClO<sub>3</sub> is 10g/100g H<sub>2</sub>O at this temperature. State the approximate solubilities of the two other encircled salts each at 30°C. (2 marks)

### Question 2

(11 marks)

- Which salt is least soluble in water? (1 mark)
- How many grams of potassium chloride can be dissolved in 200 g of water at 80°C? (1 mark)
- At 10°C, how much potassium nitrate can be dissolved in 300 g of water? (1 mark)
- Which salt shows the least change in solubility from 0° - 100°C? (1 mark)
- At 30°C, 90g of sodium nitrate is dissolved in 100g of water. Is this solution saturated, unsaturated or supersaturated? (1 mark)
- 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? (2 marks)
- What compound shows the most change in solubility due to the change of temperature from 0° to 40°C? (1 mark)
- Which salt is most soluble at 10° C? (1 mark)
- Which salt is least soluble at 50° C? (1 mark)
- Which salt is least soluble at 90° C? (1 mark)