BETH "KEY"

Use the solubility curve below to label the following solutions as saturated or unsaturated. If unsaturated, write how much more solute can be dissolved in the solution.

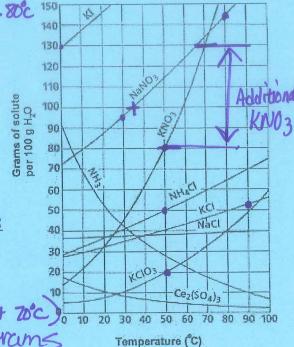
Solution	Saturated or Unsaturated?	If unsaturated: How much more solute can dissolve in the solution?
a solution that contains 70g of NaNO ₃ at 30°C (in 100 mL H ₂ O) 95g NaNO ₃	Unsaturated	$70 + x = 95$ $1 \times = 259$
a solution that contains 50g of NH ₄ Cl at 50°C (in 100 mL H ₂ O) 509 NH ₄ Cl	Saturated	50 + x = 50 $X = 09$
a solution that contains 20g of KCIO ₃ at 50°C (in 100 mL H ₂ O) 20g kCO ₃	Saturated	
a solution that contains 70g of KI at 0°C (in 100 mL H ₂ O) 129 g KI 106 g H ₂ O	Unsaturated	70g + x = 129g $1x = 59g$

Additional Practice:

- 1. a. At 90°C, you dissolved 10 g of KCl in 100. g of water. Is this solution saturated or unsaturated?
 - b. How do you know? 53g KCR dissolve in 100g H2O at 90°C is saturation.
- 2. A mass of 100 g of NaNO₃ is dissolved in 100 g of water at 80°C. | 145g NaNO₃ / 100 g H2O = Sot at.80°C.
- a) Is the solution saturated or unsaturated?
- b) As the solution is cooled, at what temperature should solid first appear in the solution? Explain. At 35°C 100.9 is soluration for NaNO3. See graph.
- 3. Use the graph to answer the following questions:

Which compound is **most** soluble at 20 °C? KI
Which is the **least** soluble at 40 °C? Ce2(SO4)3
Which substance on the graph is **least** soluble at 10°C? KCCO3

4. A mass of 80 g of KNO₃ is dissolved in 100 g of water at 50 °C. The solution is heated to 70°C. How many more grams of potassium nitrate must be added to make the solution saturated? Explain your reasoning. 80°C X = 130°C (Soluration at 70°C) of Actional grams



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