REVIEW
SOLUBILITY

1. _____ is the substance that is dissolved.

2. _____ is the substance that does the dissolving.

3. _____ are homogeneous mixtures.

4. A (n)_____ solution has the maximum amount of solute dissolved in a given amount of solvent.

5. A(n) _____ solution can dissolve more solute.

6. Opposite of soluble is _____.

7. _____ is how many grams of solute dissolves in 100 cm$^3$ of water.

8. For most solid solutes, as temperature goes up, solubility goes _____

9. For most gas solutes, as temperature goes up solubility goes _____

10. Discuss thermal pollution and its affects on gas solubility:


*Use solubility chart from class for the following questions (included at end of document)*

11. What is the solubility of NaCl at 25$^o$C?

12. What is the solubility of KNO$_3$ at 70$^o$C?

13. At what temperature is the solubility of KNO$_3$ 20g/100cm$^3$ H$_2$O?

14. At what temperature is the solubility of NaNO$_3$ 90g/100cm$^3$ H$_2$O?

15. How many grams of KClO$_3$ dissolves in 100 cm$^3$ H$_2$O at 30$^o$C?

16. How many grams of KNO$_3$ dissolves in 100 cm$^3$ H$_2$O at 50$^o$C?

17. How many grams of KCl will dissolve in 40 cm$^3$ H$_2$O at 80$^o$C?

18. How many grams of NH$_3$ will dissolve in 500 cm$^3$ H$_2$O at 80$^o$C?

19. How many grams of KNO$_3$ will dissolve in 250 cm$^3$ H$_2$O at 50$^o$C?

20. If 30 grams of KNO$_3$ are dissolved in 100cm$^3$ H$_2$O at 20$^o$C, will the solution be saturated or unsaturated?  Explain why?

21. How many moles of $Na_3PO_4$ are needed to make 500.0 ml of a 0.50 M solution?

22. What is the molarity of a solution containing 10.00 g of $H_3PO_4$ dissolved in 500.0 ml of solution?

23. How many grams of calcium oxide are needed to make 50.0 ml of a 0.75 M solution?

24. How many liters of solution are needed to dissolve 25.5 g hydrogen phosphate if a concentration of 0.25 M is needed?

25. What is the nitrate ion concentration if 22.50 g of barium nitrate are dissolved in 500. ml of solution?

26. How many grams of $H_2SO_4$ were dissolved in 250.0 ml of solution if the final hydrogen ion concentration is 0.25 M?
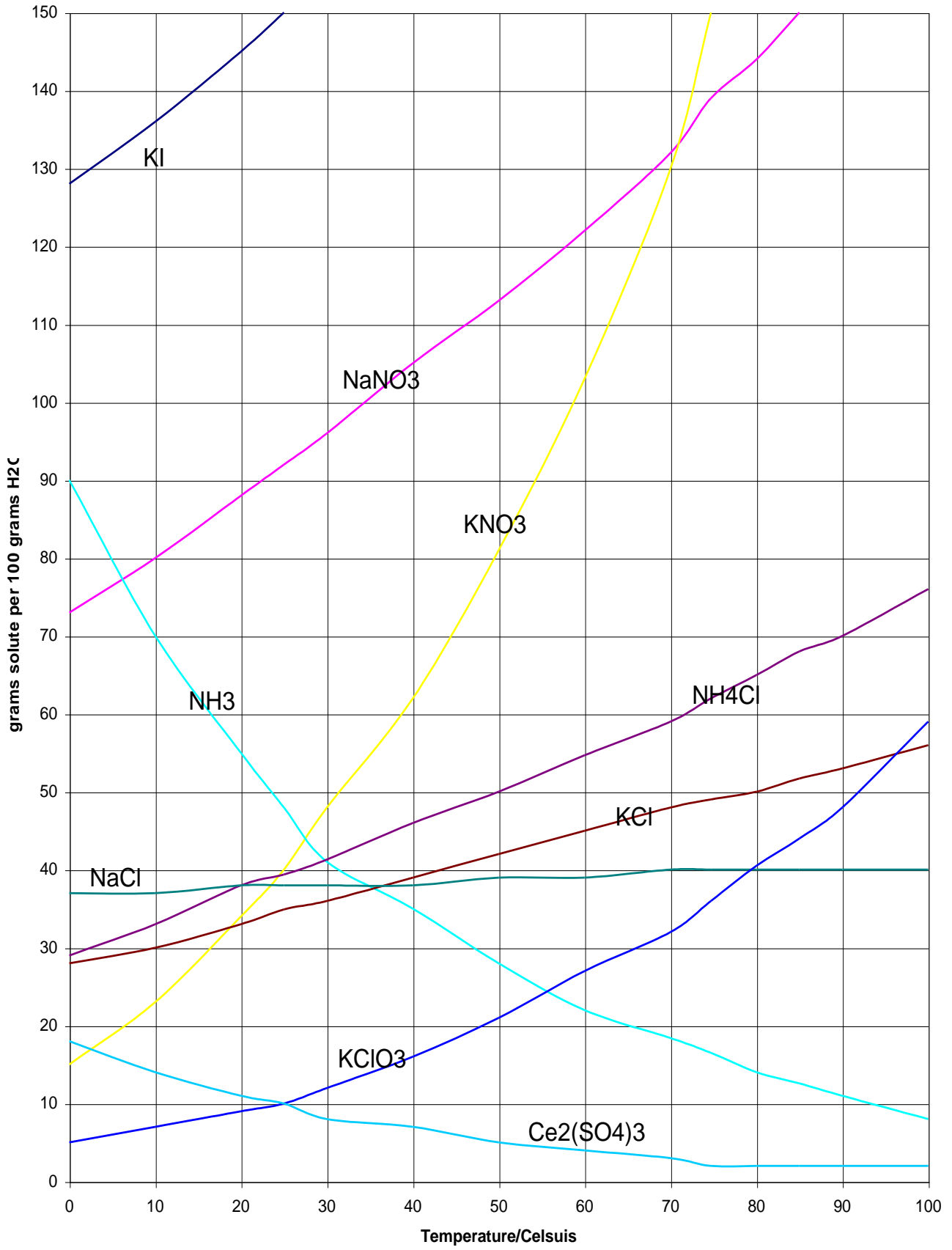
27. Calculate the molality of a solution of 50.0 g nickel (II) chloride in 100.0 g of water.

28. 12.5 g barium chloride dissolves in 250. ml of water.  Calculate the mass percent concentration.

29. What is the new boiling point is 25.0 g of calcium chloride is dissolved in 500. ml of water?

30. When 10.0 g of a nonelectrolyte is added to 50.0 g of water, the new freezing point is -3.25°C. What is the molecular mass of the unknown compound?

Solubility Curves of Pure Substances

grams solute per 100 grams H2O

Temperature/Celsuis

KI
NaNO3
KNO3
NH3
NH4Cl
KCl
NaCl
KClO3
Ce2(SO4)3

# Solubility Curves



Temperature (°C)