

Solubility Curve Worksheet

- 1) Define solubility.

- 2) Look at the graph below. In general, how does temperature affect solubility?

- 3) Which compound is LEAST soluble at 10 °C? _____
- 4) How many grams of KCl can be dissolved in 100g of water at 80°C? _____
- 5) How many grams of NaCl can be dissolved in 100g of water at 90°C? _____
- 6) At 40°C, how much KNO₃ can be dissolved in 100g of water? _____
- 7) Which compound shows the least amount of change in solubility from 0°C-100°C?

- 8) At 30°C, 90g of NaNO₃ is dissolved in 100g of water. Is this solution saturated or unsaturated?

- 9) At 60°C, 72g of NH₄Cl is dissolved in 100g of water. Is this solution saturated or unsaturated?

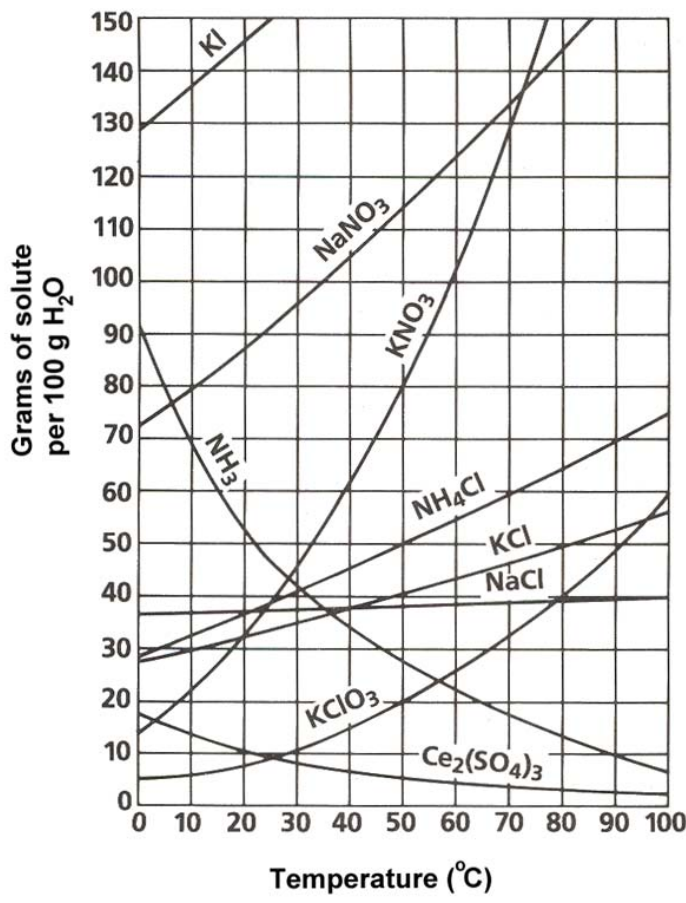
- 10) A saturated solution of KClO₃ is formed from one hundred grams of water. If the saturated solution is cooled from 90°C to 50°C, how many grams of precipitate are formed? _____

- 11) A saturated solution of NH₄Cl is formed from one hundred grams of water. If the saturated solution is cooled from 80°C to 40°C, how many grams of precipitate are formed? _____
- 12) Which compounds show a *decrease* in solubility from 0°C-100°C?

- 13) Which compound is the most soluble at 10°C?

- 14) Which compound (besides Ce₂(SO₄)₃) is the least soluble at 50°C? _____
- 15) For each of the following solutions, explain how much of the solute will dissolve and how much will remain undissolved at the bottom of the test tube?
 - a) 120 g of KCl in 100 g of water at 80°C

 - b) 130 g of NaNO₃ in 100 g of water at 50°C



Solutions Review Worksheet

16) What are the 3 different types of mixtures?

17) What is a solution?

18) Classify each of the following as a heterogeneous mixture or a homogeneous mixture.

a) salad _____

b) tap water _____

c) muddy water _____

19) What is the difference between a solute and solvent?

20) What is considered to be the "universal solvent"? _____

21) Describe (in detail) the 3 steps in solution formation.

22) What is the difference between dissociation and solvation?

23) Not all solutions are solids dissolved in liquids. Provide 2 examples of other types of solutions.

24) EXPLAIN the 3 factors that affect the rate of dissolving?

25) Define solubility

26) What are 3 factors that affect solubility?

- a) _____
- b) _____
- c) _____

27) Explain the rule, "Like Dissolves Like".

6) State whether each of the following will conduct an electric current. Also, explain why each does or does not conduct an electric current.

a) salt (NaCl) water

b) sugar water

c) solid NaCl

28) When does solution equilibrium occur?

29) What are the differences between a saturated solution, unsaturated solution and a supersaturated solution?

30) How could you tell by looking at a solution that it was saturated?

31) What is the Tyndall Effect? Cite a common example of this effect.

32) In what type of mixture is it easiest to separate the component substance? WHY?

33) Given an unknown mixture consisting of two substances, explain how a scientist could use lab techniques to determine whether the mixture is a true solution, a colloid, or a suspension.

❖ Use the solubility curve below to answer the following questions:

34) Which salt is LEAST soluble at 20 °C? _____

35) How many grams of KBr can be dissolved in 100g of water at 60°C? _____

36) How many grams of NaCl can be dissolved in 100g of water at 100°C? _____

37) At 40°C, 180g of NaClO₃ is dissolved in 100g of water. Is this solution saturated or unsaturated?

38) At 70°C, 70g of KBr is dissolved in 100g of water. Is this solution saturated or unsaturated?

39) A saturated solution of NaClO₃ is formed from one hundred grams of water. If the saturated solution is cooled from 80°C to 60°C, how many grams of precipitate are formed? _____

40) How much of the solute will dissolve and how much will remain undissolved at the bottom of the test tube?

a) 160 g of KNO₃ in 100 g of water at 50°C

