

SOLUBILITY CURVE WORKSHEET

Use your solubility curve graph provided to answer the following questions.

1. What are the customary units of solubility on solubility curves? _____
2. Define solubility. _____
3. According to the graph, the solubility of any substance changes as _____ changes.
4. List the substances whose solubility decreases as temperature increases. _____

5. Which substance is least affected by temperature changes? _____
6. How many grams of ammonium chloride (NH_4Cl) at 50°C ? _____
7. _____ and _____ have the same solubility at approximately 78°C .
8. Which compound is least soluble in water at 10°C ? _____
9. How many grams of KNO_3 can be dissolved at 50°C ? _____
10. Are the following solutions unsaturated, saturated, or supersaturated?
 - a. 45g of NaNO_3 in 100 g of water at 30°C . _____
 - b. 60g of KClO_3 in 100 g of water at 60°C . _____
11. How many grams of sodium chloride, NaCl are required to saturate 100 grams of water at 100°C ? _____
12. How many grams of NaNO_3 are required to saturate 100 grams of water at 90°C ? _____
13. How many grams of KI will saturate water at 20°C ? _____
14. At what temperature would 25g of potassium chlorate (KClO_3) dissolve? _____
15. At what temperature would 55g of NH_4Cl dissolve? _____
16. 89 g NaNO_3 is prepared at 30°C .
 - a) Will all of the salt dissolve? _____
 - b) What mass of NaNO_3 will dissolve at this temperature? _____
17. If 25 grams of NH_4Cl is dissolved at 50°C , how many additional grams NH_4Cl would be needed to make the solution saturated at 80°C ? _____
18. At 50°C , how many grams of KNO_3 will dissolve? _____
19. At 70°C , how many grams of cerium (III) sulfate ($\text{Ce}_2(\text{SO}_4)_3$) dissolve? _____
20. Determine if each of the following is unsaturated, saturated, or supersaturated.
 - a. 55g of NH_3 at 20°C . _____
 - b. 10g of $\text{Ce}_2(\text{SO}_4)_3$ at 10°C . _____
 - c. 125g of KNO_3 at 60°C . _____
 - d. 65g of NH_4Cl at 80°C . _____
 - e. 12g of NH_3 at 90°C . _____
 - f. 80g of NaNO_3 at 10°C . _____
 - g. 145g of NaNO_3 at 80°C . _____
 - h. 35g of NaCl at 100°C . _____