

Solubility Curve Worksheet

Short Answer: Answer the following questions as directed

1. List all of the SOLUTES found on the solubility curve.
2. What is the SOLVENT?
3. How much SOLVENT is there? *[HINT: what is density of H₂O]*
 $Mass =$
 $Volume =$
4. Which solute's solubility is affected the most by temperature?
5. Which solute's solubility is affected the least by temperature?
6. List all of the solutes whose solubility decreases if you increase the temperature.
7. List all of the solutes that have a metal in the compound. (these are called salts)
8. Which solute is most soluble at 0°C excluding KI?

Compare the following coordinates to the specified solute to determine if this would make an UNSATURATED; SATURATED; or SUPERSATURATED solution.

9. 55 grams of NH₃ @ 20°C in 100 grams of H₂O.
10. 83 grams of KNO₃ @ 50°C in 100 grams of H₂O
11. 60 grams of KCl @ 90°C in 100 grams of H₂O
12. 40 grams of NaCl @ 90°C in 100 grams of H₂O
13. 5 grams SO₂ @ 30°C in 100 grams of H₂O
14. 62 grams HCl @ 40°C in 100 grams of H₂O
15. 100 grams of NaNO₃ @ 45°C in 100 grams of H₂O

Answer the following items as prompted.

16. Which compounds have the same solubility at approximately 86°C?
17. How much NH₄Cl is needed to form a saturated solution in 200 grams of H₂O at 48°C?
18. How much HCl is in a saturated solution at 5°C in 50 grams of water?
19. A saturated solution of KCl at 75°C contains roughly 50 grams of KCl. How much KCl will precipitate out if the solution is cooled off 42°C?
20. I have 140 grams of NH₃, how much solvent is needed to make a saturated solution at 10°C?
21. A saturated solution of NaCl at 100°C is cooled off to the freezing point of water. How much NaCl precipitates out of solution?