

- A 1 molal solution of MgCl_2 has a higher boiling point than a 1 molal solution of
 - FeCl_3
 - CaCl_2
 - BaCl_2
 - NaCl
- How do the boiling point and freezing point of a solution of water and calcium chloride at standard pressure compare to the boiling point and freezing point of water at standard pressure?
 - Both the freezing point and boiling point of the solution are higher.
 - Both the freezing point and boiling point of the solution are lower.
 - The freezing point of the solution is higher and the boiling point of the solution is lower.
 - The freezing point of the solution is lower and the boiling point of the solution is higher.
- Compared to the freezing point and boiling point of water at 1 atmosphere, a solution of a salt and water at 1 atmosphere has a
 - lower freezing point and a lower boiling point
 - lower freezing point and a higher boiling point
 - higher freezing point and a lower boiling point
 - higher freezing point and a higher boiling point
- Which aqueous solution of KI freezes at the lowest temperature?
 - 1 mol of KI in 500. g of water
 - 2 mol of KI in 500. g of water
 - 1 mol of KI in 1000. g of water
 - 2 mol of KI in 1000. g of water
- Which solution has the lowest freezing point?
 10. g of KI dissolved in 100. g of water
 20. g of KI dissolved in 200. g of water
 30. g of KI dissolved in 100. g of water
 40. g of KI dissolved in 200. g of water
- Compared to a 2.0 M aqueous solution of NaCl at 1 atmosphere, a 3.0 M aqueous solution of NaCl at 1 atmosphere has a
 - lower boiling point and a higher freezing point
 - lower boiling point and a lower freezing point
 - higher boiling point and a higher freezing point
 - higher boiling point and a lower freezing point
- Compared to a 0.1 M aqueous solution of NaCl , a 0.8 M aqueous solution of NaCl has a
 - higher boiling point and a higher freezing point
 - higher boiling point and a lower freezing point
 - lower boiling point and a higher freezing point
 - lower boiling point and a lower freezing point
- Compared to pure water, an aqueous solution of calcium chloride has a
 - higher boiling point and higher freezing point
 - higher boiling point and lower freezing point
 - lower boiling point and higher freezing point
 - lower boiling point and lower freezing point
- At standard pressure when NaCl is added to water, the solution will have a
 - higher freezing point and a lower boiling point than water
 - higher freezing point and a higher boiling point than water
 - lower freezing point and a higher boiling point than water
 - lower freezing point and a lower boiling point than water
- When ethylene glycol (an antifreeze) is added to water, the boiling point of the water
 - decreases, and the freezing point decreases
 - decreases, and the freezing point increases
 - increases, and the freezing point decreases
 - increases, and the freezing point increases
- Which concentration of a solution of CH_3OH in water has the *lowest* freezing point?
 - 0.1 M
 - 0.01 M
 - 0.001 M
 - 0.0001 M
- What occurs as a salt dissolves in pure water?
 - The number of ions in the solution decreases, and the freezing point decreases.
 - The number of ions in the solution decreases, and the freezing point increases.
 - The number of ions in the solution increases, and the freezing point decreases.
 - The number of ions in the solution increases, and the freezing point increases.

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13. Which solution will freeze at the *lowest* temperature?
- A) 1 mole of sugar in 500 g of water
 - B) 1 mole of sugar in 1,000 g of water
 - C) 2 moles of sugar in 500 g of water
 - D) 2 moles of sugar in 1,000 g of water
14. A 1 kilogram sample of water will have the highest freezing point when it contains
- A) 1×10^{17} dissolved particles
 - B) 1×10^{19} dissolved particles
 - C) 1×10^{21} dissolved particles
 - D) 1×10^{23} dissolved particles
15. As a solute is added to a solvent, what happens to the freezing point and the boiling point of the solution?
- A) The freezing point decreases and the boiling point decreases.
 - B) The freezing point decreases and the boiling point increases.
 - C) The freezing point increases and the boiling point decreases.
 - D) The freezing point increases and the boiling point increases.
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