

Chapter 15 Review

“Water and Aqueous Systems”



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Chapter 15 Review

- *Surface tension* is the _____.
- How does the *surface tension* of water compare with the surface tensions of most *other* liquids?
- Which type of mixture(s) exhibit the *Tyndall effect*?
- Which compound *changes color* when it becomes a hydrate? a) sodium chloride, or b) copper (II) sulfate

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- Which of the following compounds is an *electrolyte*?
a) carbon tetrachloride, or b) sodium hydroxide
- Which of the following substances is *NOT an electrolyte*?
a) KCl, or b) CCl₄
- What occurs in *solvation*?

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- Which type of mixture(s) is characterized by the *settling of particles* once it stands for awhile?
- Which *symbol* is used to connect the formula of the compound with the number of water molecules in a hydrate?
- Know the *characteristics of water* having a surface tension.

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- The *bonds between* the hydrogen and oxygen atoms in a water molecule are _____ bonds.
- Which of the following compounds *conducts electricity only* in the molten state? a) barium sulfate, or b) sodium bromide
- Which of the following substances *dissolves* most readily in water?
a) BaSO₄, or b) NH₃

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- Which type of mixture(s) *can be filtered* to remove the solute?
- What is responsible for the *high thermal energy* required to melt ice?
- The fact that *ice is less dense* than water is related to the fact that _____.
- Which of the following materials is *NOT a colloid*? a) glue, or b) alloy

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- What is another term for the *water of hydration*?
- Which of the following is NOT a common *hydrate*?
a) epsom salt, or b) sugar
- What is primarily responsible for holding *water molecules together* in the liquid state?

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- Which of the following mixtures is *NOT a colloid*?
a) sugar water, or b) fog
- What causes water's *low vapor pressure*?
- Which one of the following compounds would be *insoluble in water*? a) NaCl, or b) CF₄

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- The bonds *between* adjacent water molecules are called ____ bonds.
- Which of the following compounds is a *nonelectrolyte*? a) copper chloride, or b) carbon tetrachloride
- Which atom in a water molecule has the *greatest electronegativity*?
- The "*solute*" in a *colloidal suspension* is called the ____.

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- What type of compound is always an *electrolyte*?
- What is primarily responsible for the *surface tension* of water?
- Which of these would you expect to be soluble in the *nonpolar solvent* carbon disulfide, CS₂?
a) SnS₂, or b) CCl₄

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- Which of the following substances dissolves most readily in *gasoline*?
a) CH₄, or b) NaBr
- What is the term for the *dissolving medium* in a solution?
- An *emulsion* is what type of mixture?
- Know the *properties of a solution*.

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- An *emulsifying agent* is typically characterized by having ____.
- What is the *shape of the water molecule*?
- What is the *size range* of particles in a colloid?
- A hydrated crystal that has a water vapor pressure *greater* than the water vapor pressure of air is called ____.

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- An electric current *can be conducted* by which of the following? a) a sugar solution, or b) a salt solution
- An *emulsion* is a colloidal dispersion of a ____ in a ____.
- A *solution* is a mixture that ____.
- Which of the following is *most soluble* in water?
a) sodium chloride, or b) methane

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- A crystal that *absorbs* water vapor from the air is called ____.
- How many hydrogen bonds can be formed between one hydrogen atom in a water molecule and the oxygen atoms of surrounding water molecules?
- How many nonbonding pairs of electrons are in a water molecule?

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- What is the *angle* between the bonds of a water molecule?
- At what temperature (in °C) does liquid water have it's *maximum density*?
- What is the *percentage of water* in the hydrate $\text{CoCl}_2 \cdot 6\text{H}_2\text{O}$?

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- How many *phases* are present in a colloid?
- How many *water molecules* are in 39 formula units of calcium chloride dihydrate ($\text{CaCl}_2 \cdot 2\text{H}_2\text{O}$)?

End of Chapter 15 Review