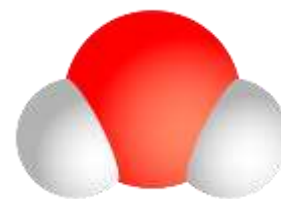


Chapter 22 Section 3 & 4 (pages 676-685)

Section 3: Particles in Solution

Particles with a Charge

- Did you know that there are charged particles in your body that conduct electricity?
- These charged particles are called ____.
- What is an electrolyte?
- Give an example of an electrolyte.
- What is a nonelectrolyte?
- Give an example of a nonelectrolyte.
- Ionic Solutions form in two ways



Ionization

- What is ionization?
- Draw of diagram of ionization (figure 10).

Dissociation

- What is dissociation?
- Draw a diagram of dissociation (figure 11 and 12).

Reading check: What are the differences and similarities between dissociation and ionization?

Effects of Solute Particles

Briefly describe each of the following effects:

Lowering Freezing Point

- **Animal Antifreeze**
- **Raising Boiling Point**
- **Car Radiators**

Reading check: Determine what has taken place, ionization or dissociation, if calcium phosphate $\text{Ca}_3(\text{PO}_4)_2$ breaks in Ca^+ and PO_4^- .

Think about it: In the Midwest, we put salt on ice that forms on sidewalks and driveways. The salt helps melt the ice, forming a saltwater solution. Explain why this solution may not refreeze.

Section 4: Dissolving Without Water

When Water Won't Work

- Why is water referred to as the universal solvent?
- Quick review: Water is polar because it has separated _____ and _____ areas
- What is a nonpolar substance?
- Does water (which is polar) attract nonpolar substances?

Nonpolar Solutes

- Figure 15: Why don't vinegar and oil mix?
- Is vinegar polar or nonpolar? Would it mix with water?
- Is oil polar or nonpolar? Would it mix with water?

Versatile Alcohol

- Can a substance be both polar and nonpolar? Explain.

Useful Nonpolar Molecules

Drawbacks of Nonpolar Solvents

- Mineral Oil is a solvent that can dissolve?
- Turpentine is a solvent that can dissolve?
- What are two drawbacks to using nonpolar solvents?

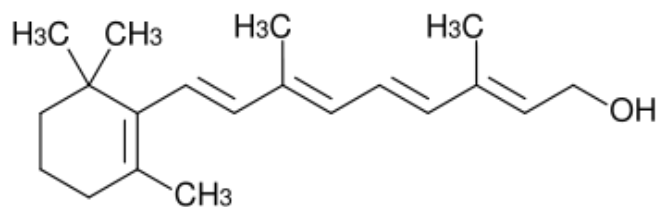
How soap works?

- Is soap a polar or nonpolar substance?
- How does soap work?

Reading Check: Why doesn't water alone clean oily dirt?

Polarity and Vitamins

- Are vitamins polar or nonpolar compounds?



Reading check: Explain the phrase “like dissolves like” and give an example of two polar “like” substances.

Think about it: What might happen to your skin if you washed with soap too often?

