PEER Life Science Properties of Hazards: Invisible Intruders Notes Outline KEY

**Introduction**

* The most common solvent is water, which is an inorganic solvent.
* Toxicity is dependent upon the potency of the toxicant and the amount of exposure to the toxic substance.
* Health hazards associated with organic solvent exposure include toxicity to the nervous system, reproductive hamage, liver and kidney damage, respiratory impairment, cancer, and dermatitis.

**Lesson**

* A solvent is a substance that is capable of dissolving another substance (called a solute) into a uniform mixture known as a solution.
* Molecules are held together by electrostatic interactions called van der Waals forces.
* Some organic solvents are highly toxic and harmful to human health.
* Solvents have many properties including: dissolving power, viscosity, evaporation rates, color, odor, toxicity, flammability, and environmental impact.
* The three components of van der Waals forces are dispersion forces, polar forces, and hydrogen bonding forces.
* Dispersion forces are size dependent; the larger the molecule the stronger the bond between molecules.
* Polar forces are dependent upon molecular characteristics such as atomic compulsion, geometric shape, and geometric size.
* When the single electron orbiting a hydrogen atom is pulled away by another atom in a molecule, a strong electromagnetic attraction is created by the exposed hydrogen proton.
* The properties of solvents vary because the strength and the nature of the component forces binding them together vary.