Chapter 4: Atoms and Elements

1. Chapter 4: Atoms and Elements
2. 4.1: Experiencing Atoms at Tiburon
3. 4.2: Indivisible: The Atomic Theory
4. 4.3: The Nuclear Atom
5. 4.4: The Properties of Protons, Neutrons, and Electrons
6. 4.5: Elements: Defined by Their Numbers of Protons
7. 4.6: Looking for Patterns: The Periodic Law and the Periodic Table
8. 4.7: Ions: Losing and Gaining Electrons
9. 4.8: Isotopes: When the Number of Neutrons Varies
10. 4.9: Atomic Mass: The Average Mass of an Element's Atoms

Chapter 5: Molecules and Compounds

1. Chapter 5: Molecules and Compounds
2. 5.1: Sugar and Salt
3. 5.2: Compounds Display Constant Composition
4. 5.3: Chemical Formulas: How to Represent Compounds
5. 5.4: A Molecular View of Elements and Compounds
6. 5.5: Writing Formulas for Ionic Compounds
7. 5.6: Nomenclature: Naming Compounds
8. 5.7: Naming Ionic Compounds
9. 5.8: Naming Molecular Compounds
10. 5.9: Naming Acids
11. 5.10: Nomenclature Summary
12. 5.11: Formula Mass: The Mass of a Molecule or Formula Unit

Chapter 6: Chemical Composition

1. Chapter 6: Chemical Composition
2. 6.1: How Much Sodium?
3. 6.2: Counting Nails by the Pound
4. 6.3: Counting Atoms by the Gram
5. 6.4: Counting Molecules by the Gram
6. 6.5: Chemical Formulas as Conversion Factors
7. 6.6: Mass Percent Composition of Compounds
8. 6.7: Mass Percent Composition from a Chemical Formula
9. 6.8: Calculating Empirical Formulas for Compounds
10. 6.9: Calculating Molecular Formulas for Compounds

Chapter 7
1. Chapter 7: Chemical Reactions
2. 7.1: Grade School Volcanoes, Automobiles, and Laundry Detergents
3. 7.2: Evidence of a Chemical Reaction
4. 7.3: The Chemical Equation
5. 7.4: How to Write Balanced Chemical Equations
6. 7.5: Aqueous Solutions and Solubility: Compounds Dissolved in Water
7. 7.6: Precipitation Reactions: Reactions in Aqueous Solution That Form a Solid
8. 7.7: Writing Chemical Equations for Reactions in Solution: Molecular, Complete Ionic, and Net Ionic Equations
9. 7.8: Acid–Base and Gas Evolution Reactions
10. 7.9: Oxidation–Reduction Reactions
11. 7.10: Classifying Chemical Reactions
12. 7.11: The Activity Series

• Chapter 8
1. Chapter 8: Quantities in Chemical Reactions
2. 8.1: Climate Change: Too Much Carbon Dioxide
3. 8.2: Stoichiometry
4. 8.3: Making Molecules: Mole-to-Mole Conversions
5. 8.4: Making Molecules: Mass-to-Mass Conversions
6. 8.5: Limiting Reactant, Theoretical Yield, and Percent Yield
7. 8.6: Limiting Reactant, Theoretical Yield, and Percent Yield from Initial Masses of Reactants
8. 8.7: Enthalpy: A Measure of the Heat Evolved or Absorbed in a Reaction

Chapter 9
1. Chapter 9: Electrons in Atoms and the Periodic Table
2. 9.1: Blimps, Balloons, and Models of the Atom
3. 9.2: Light: Electromagnetic Radiation
4. 9.3: The Electromagnetic Spectrum
5. 9.4: The Bohr Model: Atoms with Orbits
6. 9.5: The Quantum-Mechanical Model: Atoms with Orbitals
7. 9.6: Quantum-Mechanical Orbitals and Electron Configurations
8. 9.7: Electron Configurations and the Periodic Table
9. 9.8: The Explanatory Power of the Quantum-Mechanical Model
10. 9.9: Periodic Trends: Atomic Size, Ionization Energy, and Metallic Character

• Chapter 10
1. Chapter 10: Chemical Bonding
2. 10.1: Bonding Models and AIDS Drugs
3. 10.2: Representing Valence Electrons with Dots
4. **10.3**: Lewis Structures of Ionic Compounds: Electrons Transferred
   5. **10.4**: Covalent Lewis Structures: Electrons Shared
   6. **10.5**: Writing Lewis Structures for Covalent Compounds
   7. **10.6**: Resonance: Equivalent Lewis Structures for the Same Molecule
   8. **10.7**: Predicting the Shapes of Molecules
   9. **10.8**: Electronegativity and Polarity: Why Oil and Water Don’t Mix

   • **Chapter 11
5. 1. **Chapter 11**: Gases
   2. **11.1**: Extra-Long Straws
   3. **11.2**: Kinetic Molecular Theory: A Model for Gases
   4. **11.3**: Pressure: The Result of Constant Molecular Collisions
   5. **11.4**: Boyle’s Law: Pressure and Volume
   6. **11.5**: Charles’s Law: Volume and Temperature
   7. **11.6**: Gay-Lussac’s Law: Temperature and Pressure
   8. **11.7**: The Combined Gas Law: Pressure, Volume, and Temperature
   9. **11.8**: Avogadro’s Law: Volume and Moles
   10. **11.9**: The Ideal Gas Law: Pressure, Volume, Temperature, and Moles
   11. **11.10**: Mixtures of Gases: Why Deep-Sea Divers Breathe a Mixture of Helium and Oxygen
   12. **11.11**: Gases in Chemical Reactions

   • **Chapter 12
6. 1. **Chapter 12**: Liquids, Solids, and Intermolecular Forces
   2. **12.1**: Interactions between Molecules
   3. **12.2**: Properties of Liquids and Solids
   4. **12.3**: Intermolecular Forces in Action: Surface Tension and Viscosity
   5. **12.4**: Evaporation and Condensation
   6. **12.5**: Melting, Freezing, and Sublimation
   7. **12.6**: Types of Intermolecular Forces: Dispersion, Dipole–Dipole, Hydrogen Bonding, and Ion-Dipole
   8. **12.7**: Types of Crystalline Solids: Molecular, Ionic, and Atomic
   9. **12.8**: Water: A Remarkable Molecule

   • **Chapter 13
7. 1. **Chapter 13**: Solutions
   2. **13.1**: Prelude - Tragedy in Cameroon
   3. **13.2**: Solutions: Homogeneous Mixtures
   4. **13.3**: Solutions of Solids Dissolved in Water: How to Make Rock Candy
   5. **13.4**: Solutions of Gases in Water: How Soda Pop Gets Its Fizz
   6. **13.5**: Solution Concentration: Mass Percent
The next time you are by a still body of water, take a close look at what is scooting along on the surface. You may see insects seemingly floating on top of the water. These creatures are known by a variety of names including water skaters, water striders, pond skaters, and other equally descriptive names. They take advantage of a property called surface tension to stay above the water and not sink. The force they exert downward is less than the forces exerted among the water molecules on the surface of the pond, so the insect does not penetrate beneath the surface of the water.

Surface Tension

Molecules within a liquid are pulled equally in all directions by intermolecular forces. However, molecules at the surface are pulled downwards and sideways by other liquid molecules, but not upwards away from the surface. The overall effect is that the surface molecules are pulled into the liquid, creating a surface that is tightened like a film (Figure \[\PageIndex{1A}\]). The surface tension of a liquid is a measure of the elastic force in the liquid's surface. Liquids that have strong intermolecular forces, like the hydrogen bonding in water, exhibit the greatest surface tension. Surface tension allows objects that are denser than water, such as the paper clip shown in B in the figure below, to nonetheless float on its surface. It is also responsible for the beading up of water droplets on a freshly waxed car because there are no attractions between the polar water molecules and the nonpolar wax.
Other liquids, such as diethyl ether, do not demonstrate strong surface tension interactions. The intermolecular forces for the ether are the relatively weak dipole-dipole interactions that do not draw the molecules together as tightly as hydrogen bonds would.

**Summary**

- The surface tension of a liquid is a measure of the elastic force in the liquid's surface.
- Liquids with strong intermolecular forces have higher surface tensions than liquids with weaker forces.

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