

CHM 101
Chapter 3 Study Guide / Learning Objectives

Chapter 3 in your textbook deals with the concept of matter and the changes in matter.

After reading Chapter 3 and your class notes, you should be able to:

[States of matter]

- Define **matter**.
- List and describe the important properties of the **three states of matter**.
- Draw an illustration (at the molecular level) of the three states of matter.
- Describe how to change matter from one state to another.

[Physical changes vs. chemical changes]

- Define **physical change** and **chemical change**.
- Define **physical property** and **chemical property**.
- Give examples of physical and chemical changes.
- Give examples of the physical and chemical properties of substances.
- Given a change, tell whether it is a physical change or a chemical change.
- Given a property, tell whether it is physical or chemical.

[Classification of matter - mixtures]

- Define **pure substances** and **mixtures**.
- Determine whether a given collection of matter is a pure substance or a mixture.
- Define homogeneous mixture and heterogeneous mixture.
- Given a mixture, determine if it is homogeneous or heterogeneous.
- Give examples of the two types of mixture.

[Classification of matter - pure substances]

- Define **elements** and **compounds**.
- Find elements in the periodic chart (given the chart).
- Given a pure substance, determine whether it is an element or a compound.
- Give examples of the two types of pure substance.
- Given a collection of matter, tell whether it is a homogeneous mixture, a heterogeneous mixture, an element, or a compound.

[Conservation of mass]

- Define the **law of conservation of mass**.

[Practice]

- (p54a-54c) Q&P 2, 4, 6, 8, 10, 16, 18, 20, 24, 28, 30, 34, 36