

Academic Chemistry – Unit 1 Review

Chapter 2 – Matter & Change

- Which phase best describes an apple?
 - Heterogeneous mixture
 - Homogeneous compound
 - Heterogeneous substance
 - Homogeneous mixture
- Which of the following is *not* a chemical change?
 - Paper being shredded
 - Steel rusting
 - Charcoal burning
 - A newspaper yellowing in the sun
- Which of these properties could *not* be used to distinguish between table salt and table sugar?
 - Boiling point
 - Melting point
 - Density
 - Color
- Which description correctly identifies each of the following materials:
(A) compound (B) heterogeneous mixture (C) element (D) homogeneous mixture
 - Air
 - Carbon monoxide
 - Zinc
 - Mushroom pizza
- Name the elements found in each of the following compounds.
 - Ammonia (NH_3)
 - Potassium carbonate (K_2CO_3)
- Classify the following properties of the element silicon as chemical or physical properties.
 - Blue-gray color
 - Brittle
 - Reacts vigorously with fluorine
 - Doesn't dissolve in water
 - Melts at 1410°C
- Identify the factors that indicate a chemical change has occurred.
- Identify the 3 states of matter and give an example of each.

Chapter 3 – Scientific Measurement

- Arrange the following units in order of smallest to largest: cg, kg, mg, g, μg
- Identify the number of significant figures in the following examples:
 - 7,230,000,000
 - 7.230,000,001
 - 23,652,678
 - 80.1
 - 0.00234
 - 0.00130
- An over-the-counter medicine has 325 mg of its active ingredient per tablet. How many grams does this mass represent?
- Convert 436 kg to cg
- Perform the following calculations and report the answer to the correct number of significant figures.
 - $11.31 \div 5.04$
 - $2.75 \times 3.1 \times 5.789$
 - $5.50 - 2.1$
 - $10 + 15.75$
- Put the following examples into scientific notation or standard notation:
 - 0.000000000532
 - 62,000
 - 4.51×10^{-3}
 - 5.6×10^8
- The density of dry air measured at 25°C is $1.19 \times 10^{-3} \text{ g/cm}^3$. What is the volume of 50.0 g of air?
- A graduated cylinder contains 44.2 mL of water. A 48.6-g piece of metal is carefully dropped into the cylinder. When the metal is completely covered with water, the water rises to the 51.3-mL mark. What is the density of the metal?
- Convert 3.34 nm/min to cm/sec
- Convert 17°C to Kelvin.