

## U1-LM1B- Worksheet - Matter

1. Matter has \_\_\_\_\_ and occupies \_\_\_\_\_. There are two types of matter mixtures and \_\_\_\_\_.
2. Pure substances have unique \_\_\_\_\_. Pure substances are divided into - \_\_\_\_\_ and \_\_\_\_\_.
3. Mixtures are composed of at least \_\_\_\_\_ substances. When a mixture is composed of one phase only and has the same concentration throughout, it is referred to as a \_\_\_\_\_ mixture or a \_\_\_\_\_. If a mixture is composed of two or more phases and does not have the same concentration throughout, it is referred to as a \_\_\_\_\_ mixture. Mixtures of the same substances will have different properties if they have different \_\_\_\_\_.
4. \_\_\_\_\_ always have the same physical and chemical properties. Whereas the properties of mixtures vary with \_\_\_\_\_ and \_\_\_\_\_.
5. Classify each of the following as element, compound, homogenous or heterogeneous mixture:

Air	Sodium chloride
Mercury	Distilled water
Tap water	Carbon monoxide
Wood	Distilled Vinegar
Oil + water	Soil
Sugar (sucrose)	Aspirin

6. Classify each of the following properties of nitric acid ( $\text{HNO}_3$ ) as a physical (P) or chemical (C) property:  
\_\_\_\_\_ Pure  $\text{HNO}_3$  is a colorless liquid.  
\_\_\_\_\_ The boiling point of  $\text{HNO}_3$  is  $83^\circ\text{C}$ .  
\_\_\_\_\_ Light or heat can cause the  $\text{HNO}_3$  to decompose.  
\_\_\_\_\_ Nitric acid is very soluble in water.
7. Classify each of the following properties of calcium (Ca) as a physical (P) or chemical (C) property:  
\_\_\_\_\_ Calcium is a dull gray solid  
\_\_\_\_\_ The melting point of calcium is  $839^\circ\text{C}$ .  
\_\_\_\_\_ The density of calcium is  $1.54\text{ g/mL}$ .  
\_\_\_\_\_ When calcium is placed in water, bubbles of gases form.

8. Identify which of the following are physical changes and which are chemical changes?

\_\_\_\_\_ Rusting of iron

\_\_\_\_\_ Sublimation of carbon dioxide

\_\_\_\_\_ Tarnishing of silver

\_\_\_\_\_ Condensation of water vapor

\_\_\_\_\_ Emission of light by an oil lamp

\_\_\_\_\_ Decomposition of Limestone when heated

\_\_\_\_\_ Leaves changing color in the fall

\_\_\_\_\_ Slicing bread

9. Identify which is an intensive and which is an extensive property:

\_\_\_\_\_ Volume

\_\_\_\_\_ Temperature

\_\_\_\_\_ Pressure

\_\_\_\_\_ Density

\_\_\_\_\_ Color

\_\_\_\_\_ Mass

\_\_\_\_\_ Boiling point

\_\_\_\_\_ Heat