

U1-LM1B- Worksheet - Matter

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

Air	homogenous	Sodium chloride	compound
Mercury	element	Distilled water	compound
Tap water	homogenous	Carbon monoxide	compound
Wood	heterogeneous	Distilled Vinegar	homogenous
Oil + water	heterogeneous	Soil	heterogeneous
Sugar (sucrose)	compound	Aspirin	compound
6. Classify each of the following properties of nitric acid (HNO_3) as a physical (P) or chemical (C) property:
 - p Pure HNO_3 is a colorless liquid.
 - p The boiling point of HNO_3 is 83°C .
 - c Light or heat can cause the HNO_3 to decompose.
 - p 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:
 - p Calcium is a dull gray solid
 - p The melting point of calcium is 839°C .
 - p The density of calcium is 1.54 g/mL .
 - c When calcium is placed in water, bubbles of gases form.

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

 c Rusting of iron

 p Sublimation of carbon dioxide

 c Tarnishing of silver

 p Condensation of water vapor

 c Emission of light by an oil lamp

 c Decomposition of Limestone when heated

 c Leaves changing color in the fall

 p Slicing bread

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

 e Volume

 i Temperature

 i Pressure

 i Density

 i Color

 e Mass

 i Boiling point

 e Heat