

Properties of Matter and Mixtures Questions

1. Replace each of the following descriptions with one or two words.
- A sample of matter that contains only one kind of atom.
 - A characteristic of matter that involves the formation of a new substance.
 - A family of elements that includes sodium and potassium.

2. Classify each of the following as a pure substance or a mixture.

Substance	Pure substance or mixture	Element, compound, solution, heterogeneous mixture
Soapy water		
Water (H ₂ O)		
Sodium chloride		
Water		
Magnesium (Mg)		
Trail mix		
Kool-Aid		
Helium (He)		

3. Classify each of the following as a physical property or a chemical property.

	Physical or chemical property
Gasoline is a clear pink solution	
Propane burns in air	
Water boils at 100°C	
Electric current can split water into hydrogen and oxygen gases	
Ice melts at 0°C	
Diamond is an extremely hard substance	
Sodium burns when placed in water	

4. The sentences below contain errors or are incomplete. Write complete, correct versions.

- Elements and solutions are examples of pure substances.
- The melting point of a substance is an example of a chemical property.
- Fluorine, chlorine, and iodine are members of the alkaline earth metals family.

5. When aluminum metal is added to hydrobromic acid, hydrogen gas and an aluminum bromide solution are formed.

- What kind of change has occurred? How do you know?
- Which substances are the reactants and which are the products?

6. When sodium carbonate is added to water, the sodium carbonate dissolves. When hydrochloric acid is added to the solution, the solution fizzes. What kinds of changes have occurred? How do you know?