

1.4 PROPERTIES OF MATTER

1. What is chemistry?

Mass is the quantity of matter present in a body.

The mass of a body is constant and is independent of its location.

Matter is anything that has mass and occupies space.

It is also correct to say that matter is a form of energy.

2. Define and distinguish between physical and chemical properties and then make a list of the properties under the headings below.

Physical Properties

Chemical Properties

3. What is the difference between ductility and malleability?

4. What is a chemical reaction?

5. If a substance is altered so that its composition is not changed, what kind of change has taken place? Explain.

6. Indicate with a check mark whether the change listed is physical or chemical. Give a brief explanation or evidence for you choice. (Note: Some chemical changes result in physical changes as well. In that case, it is unnecessary to place a check mark for the physical change.)

Change	Physical ✓	Chemical ✓	Explanation or Evidence
driving a nail with a hammer			
boiling water			
frying an egg			
fermentation of grapes			
a football moving through the air			
the water cycle			
aging paper turning yellow			
burning wood			
rusting iron			
leaves turning yellow in the fall			

7. Describe what a pure substance is and give a couple of examples.

8. What is a mixture? Give a couple of examples.

9. What is the difference between a homogeneous and a heterogeneous mixture? Give a few examples.

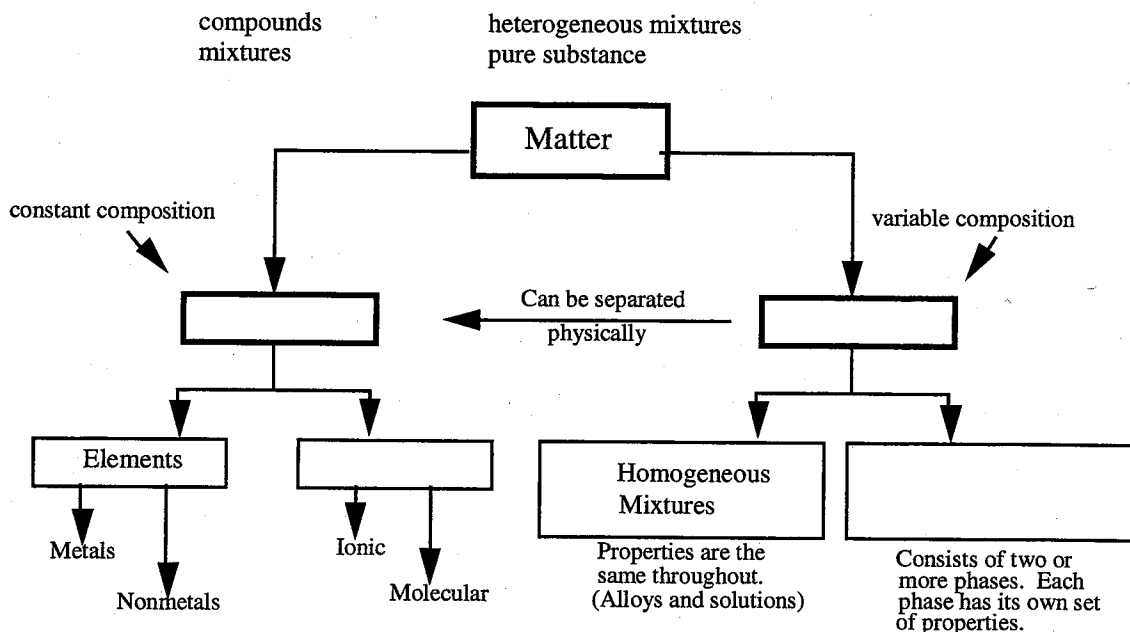
SOLUTE A substance that dissolves (dissociates) in a solvent and forms a solution.

SOLVENT A medium, usually a liquid, into which something (solute) is dissolved to form a solution.

10. Describe what a solution is.

11. What is the most common (universal) solvent?

12. Select and place the proper terms in the blank rectangles in the chart below.



13. How can the mixtures, listed in the table below, be separated into their component parts? Briefly describe the procedures in the spaces provided.

Mixture	Method of Separation
salt and sand	
oil and water	
grain alcohol and water	
sand and iron filings	
bacteria and water	