

UNIT

9

MATTER AROUND US



Learning Objectives

After the completion of this lesson, students will be able to:

- ◆ know about the types of matter.
- ◆ know the symbols of various elements.
- ◆ classify elements into metals, non-metals and metalloids
- ◆ compare the properties of metals and non metals.
- ◆ acquire knowledge about compounds of solids, liquids and gases.
- ◆ know about the uses of compounds in daily life.



Introduction

In the universe all manifestations, phenomena and evolution of life are caused by matter and energy. All the objects which exist around us are made of some kind of matter. We perceive these objects through our senses like sight, touch, hearing, taste and smelling. A glass tumbler can be seen, agarbatti burning can be recognized by its smell whereas wind blowing can be felt. All kinds of matter possess mass and occupy space. Of course some are heavy and others are light. Thus, matter can be defined as anything which has definite mass and occupies space.

As we know already, matter exists as solids (wood, stone, sand, iron etc.), liquids (water, milk, fruit juice, etc.) and gases (oxygen, nitrogen, carbon dioxide, steam, etc.). Matter in any physical state is composed of smaller particles such as atom, molecules or ions. An atom is the smallest particle of an element which exhibits all the properties of that element. Atoms of the same element or different elements combine to form a molecule. Atoms or group of atoms having a charge (positive or negative) are called ions.

Hence, atoms are the building blocks of matter. In this lesson, we will study about symbols of elements, metals and non metals, compounds of solids, liquids and gases, and the uses of compounds in daily life.

9.1 Elements

Elements are everywhere. They are the building blocks of everything on Earth: pencil, desk, mountains, car, book, etc. Do you know that when you are breathing you are actually inhaling air? The air you breathe is made up of many elements like oxygen, nitrogen and argon.

An element is a pure substance that cannot be broken down by chemical methods into simpler components. For example, the element gold cannot be broken down into anything other than gold. If you keep hitting gold with a hammer, the pieces would get smaller, but each piece will always be gold.

Elements consist of only one type of atoms. An atom is the smallest particle of an element that still has the same properties of that element.