

ELEMENTS, COMPOUNDS AND MIXTURES

INTRODUCTION

SUBJECT-CHEMISTRY

CHAPTER-03

CHAPTER NAME-ELEMENTS, COMPOUNDS AND MIXTURES

PERIOD-1

CHANGING YOUR TOMORROW



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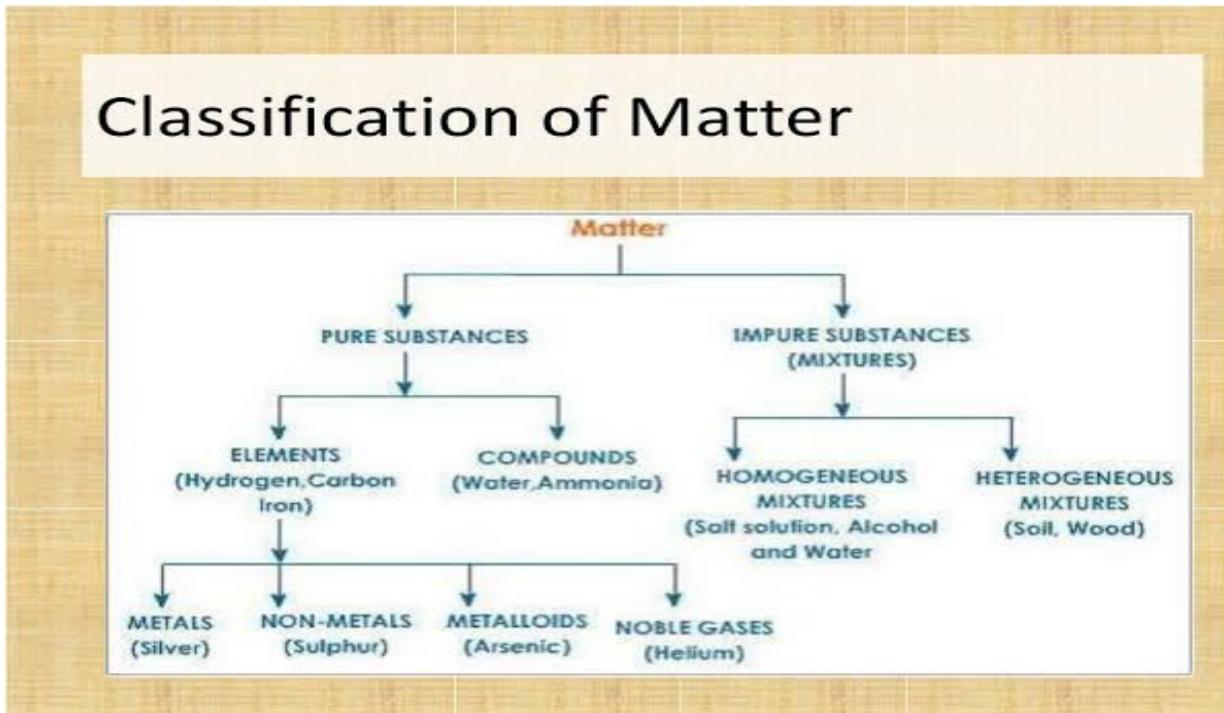
LEARNING OBJECTIVE

- You will be able to know about the classification of substances or matter.
- You will be able to know about the pure and impure substances or matter.
- You will come to know of the concept of elements along with examples.
- You will be able to know about the concept of compounds.
- You will be able to know about the classification of elements as well as their examples.



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CLASSIFICATION OF SUBSTANCES OR MATTER



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PURE AND IMPURE SUBSTANCES

SUBSTANCE

- It is of two types:
 1. Pure Substance
 2. Impure substance
- 1. **Pure Substance:** It may be defined as a material which contains only one kind of atoms or molecules and have uniform composition and properties.
Pure substances are again of two types:
 - (a) Elements
 - (b) Compounds
- 2. **Impure Substance:**
 - (a) It may be defined as a material which contains more than one kind of atoms or molecules and do not have uniform composition and properties throughout.

It is also named as mixture



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ELEMENTS AND ITS TYPES

Elements:

- Pure substances which are made up of only one kind of atoms are known as elements.
- They cannot be split up into two or more simpler substances by any of the usual chemical methods.
- For example, Iron, gold, silver, carbon, oxygen, nitrogen and sodium etc.

Elements are further grouped into the following three categories:

- (i) Metals, for example: Iron, copper, gold, sodium, silver, mercury, etc.
- (ii) Non – metals, for example: Carbon, oxygen, sulphur, nitrogen, oxygen, hydrogen, etc.
- (iii) Metalloids: Boron, silicon, germanium, etc.
- (iv) Noble Gases : Helium, Neon, Argon, Krypton, Xenon, Radon



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METALS AND NON-METALS

Properties of Metals:

- These are lustrous (shine).
- They conduct heat and electricity.
- All metals are malleable and ductile.
- They are sonorous.
- All metals are hard except sodium and potassium.
- All metals are solids at room temperature except mercury which is a liquid.

Properties of Non-metals:

- Non-Metals are dull.
- They are poor conductors of heat and electricity except diamond which is a good conductor of heat and graphite which is a good conductor of electricity.
- They are neither malleable nor ductile.
- They are generally soft except diamond which is the hardest natural substance known.
- They may be solids, liquids, or gases at room temperature.



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METALLOIDS

Metalloids:

- ☒ The elements that have properties intermediate between those of metals and non-metals, are called metalloids.
- ☒ They are hard solids
- ☒ Example: - Boron, Silicon, Germanium, Arsenic, Antimony, Tellurium and Polonium etc



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NOBLE GASES

INERT OR NOBLE GASES

- These Elements do not react chemically with other elements or compounds, so they are known as noble or inert gases.
- They are found in air in traces.
- ☒ They are six in number—— Helium, Neon, Argon, Krypton, Xenon, Radon



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COMPOUNDS

Compounds:

- It is a form of matter formed by combining two or more elements in a definite ratio by mass.
- It Can be decomposed into its constituent elements by suitable chemical methods.
- For example: Water (H_2O), oxygen (O_2), Nitrogen dioxide (NO_2), etc.



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VIDEO TIME

<https://youtu.be/QIeFd7j7zEY>

WATCH THE ABOVE VIDEO



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HOME ASSIGNMENT

- ❑ Exercise-1 Q 1, Q2 & Q 7
- ❑ Justify the statement “ Water is a Compound”
- ❑ Differentiate between pure and impure substances.
- ❑ What do you mean by metalloid? Give some examples.
- ❑ Differentiate between Metals and Non-Metals.
- ❑ Draw the Classification Chart of Matter or Substance.
- ❑ Define Element. Give Example
- ❑ Define Compound. Give Example.



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THANKING YOU

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