

CHEMISTRY

CLASS NOTES FOR CBSE

Chapter 02. Is Matter Around Us Pure

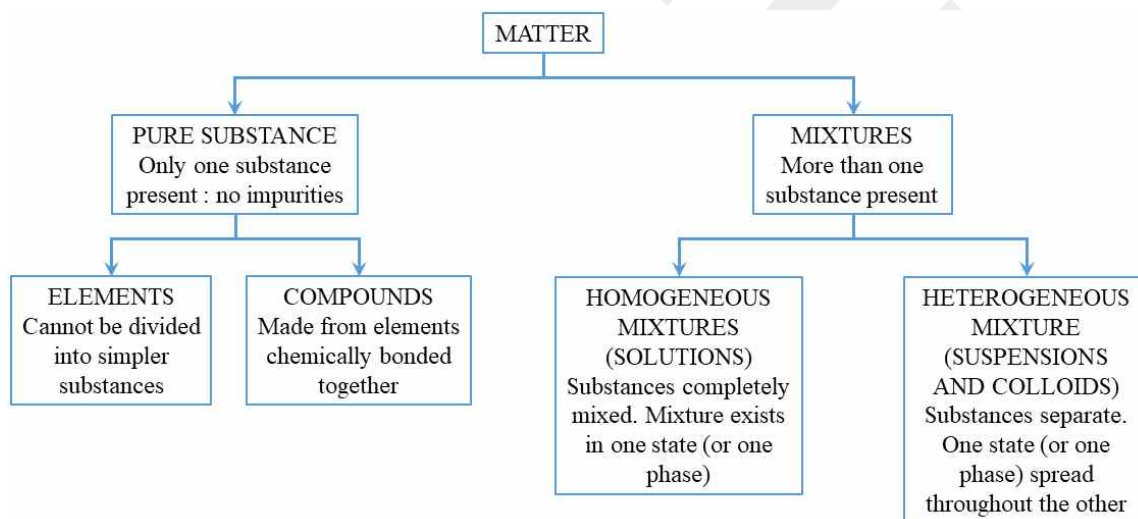
all the matter around us is not pure. the matter around us is of two types: pure substances and mixtures.

Pure Substances: Elements and compounds

A pure substance is one which made up of only one kind of particles. a pure substance is one which is made up of only one kind of atoms or molecules All the elements and compounds are pure substance because they contain only one kind of particles. thus, all the elements like hydrogen, oxygen nitrogen, chlorine, bromine, iodine carbon, sulphur, iron, copper, silver, gold, mercury and silicon, are pure substances.

Impure Substances : Mixtures

A mixture is one which contains two or more different kinds of particles (atoms or molecules.) In other words, a mixture contains two or more pure substance mixed together. All the mixture substances : because they contain more than one kind of particles, some of the examples of the mixture are : salt solution milk, sea-water, air, sugarcane juice, soft drink, sharbat, jaggery (gud), roks, minerals, petroleum, LPG, biogas, tap water, tea tap water, tea coffee, paint wood, soil and bricks. all the matter can be divided into three general classes : elements, compounds and mixtures.



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01. Elements

An element is a substance which cannot be split up into two or more simpler substance by the usual methods of applying heat, light or electric energy. for example hydrogen is an element because it cannot be split up into two or more simpler substances by the usual methods of carrying out chemical reactions by applying heat, light or electricity Elements can be solid, liquids or gases.

Metals, Non-Metals and Metalloids

On the basis of their properties, all the elements can be divided into three groups:

- (a) Metals,
- (b) Non-metals, and
- (c) Metalloids

02. Metals

A metal is an element that is malleable and ductile, and conducts electricity Some of the examples of metals. are : Iron, Copper Aluminum, zinc All the metals are solids except one metal mercury, is a liquid.

Properties of Metals

- Metals are malleable This means that metals can be beaten into thin sheets with a hammer (without breaking). Gold and metals are some of the best malleable metals
- Metals are ductile. This means that metals can be drawn (or stretched) into thin wires. All the metals are not equally Ductile. Some are more ductile than the others, Gold and silver are among the best ductile metals. For example just 100 milligrams of a highly ductile than the others. Gold and silver can be drawn into a thin wire about 200 metals, long.
- Metals are good conductors of heat and electricity this means that metals allow heat and electricity to pass through them easily. Metals are generally good conductor of heat. (The conduction of heat is also called thermal conductivity.) silver metal is the conductor of heat. Metals are good conductors of electricity. The metals offer very little resistance to the flow of electric current and hence show high electrical conductivity. Silver metal is the best conductor of electricity. Copper metal is the next best conductor of electric followed by gold aluminium and tungsten.
- Metal are lustrous (or shiny), and can be polished.
- Metal are generally hard
- Metals are usually strong they have high tensile strength
- Metals generally have high melting points and boiling points.
- Metals are sonorous. his means that metals make a ringing a ringing sound when we strike them . It is due to the property of sonorousness of metals that they are sued for making bells, plate type musical instruments like cymbals (manjira) and wires (or strings) for stringed musical instruments such as violin, guitar, and tanpoora, etc



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03. Non-Metals

A non-metal is an element that is neither malleable nor and does not conduct electricity some of the examples of non-metals are : Carbon, Sulphur, Phosphorus, Hydrogen Oxygen Nitrogen, Fluorine,

Properties of non-metals

- Non-metals are not malleable. non-metals are brittle. This means that non-metals cannot be beaten into thin sheets with a hammer. Non-metals break into small piece when hammered.
- Non-metals are not ductile this means that non-metal cannot be drawn into wires. They are easily snapped on stretching. for example, sulphur and phosphorus are non-metal and they not ductile.
- Non-metals are bad conductors of heat and electricity this means that non-metals do not allow heat and electricity to pass through them. for example, sulphur and phosphorus are non-metals which do not conduct heat or electricity diamond is a non-metal which is a good conductor of heat. graphite is a not-metal which is a good conductor of electricity.
- Non-metals are not lustrous (not shiny) they are dull in appearance.
- Non-metals are generally soft except diamond which is extremely hard non-metal
- Non-metals are not strong. they have low tensile strength.
- Non-metals may be solid, liquid or gases at the room temperature
- Non-metals have comparatively low melting points and boiling points except graphite which is a non metal having a very high melting point
- Non-metals have low densities.
- Non-metals are not sonorous.
- Non-metals have many different colours.

04. Metalloids

The elements which show some properties of metals and some other properties of non-metals are called metalloids. The important examples of metalloids are boron (B) Silicon (Si), and Germanium (Ge).

05. Mixtures

A mixture is a substance which consists of two or more elements or compound not chemically combined together.

Types of Mixtures

Mixture are of two types :

- Homogeneous mixtures, and
- Heterogeneous mixture

Those mixtures in which the substances are completely mixed together and are indistinguishable from one another, are called homogeneous mixtures. A homogeneous mixture has a uniform composition throughout its mass. it has no visible boundaries of separation between the various constituents.



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