

# CHEMISTRY STUDY MATERIALS FOR CLASS 9

## (NCERT based Revision Notes on Chapter - 2)

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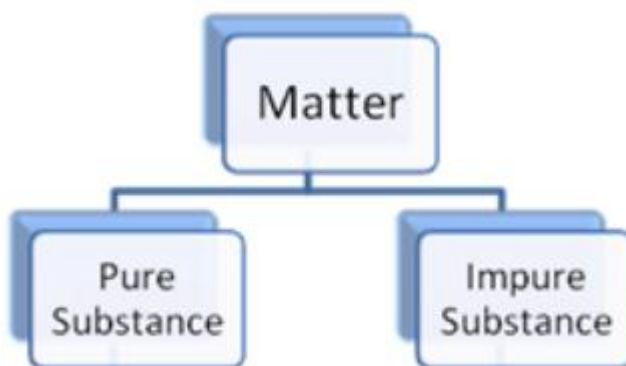
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### Is Matter Around Us Pure

#### What is a substance?

- Anything that cannot be broken into further particles by applying any physical processes is called a **Substance**.
- Matter can be classified into two types of substances – Pure substances and Mixtures



#### What is a pure substance?

A substance that consists of only one type of particle is called a **Pure Substance**.

**For Example**, Diamond, Salt, Sulfur, Tin.

#### What is a mixture?

When we combine different substances into each other a mixture is formed.

**For Example**,

Lemonade is a mixture of three substances, Lemon Juice, Sugar and Water.

#### Which of these is a mixture or a pure substance?

(Water, Copper, Chocolate cake, Hydrogen, Soil, Air)

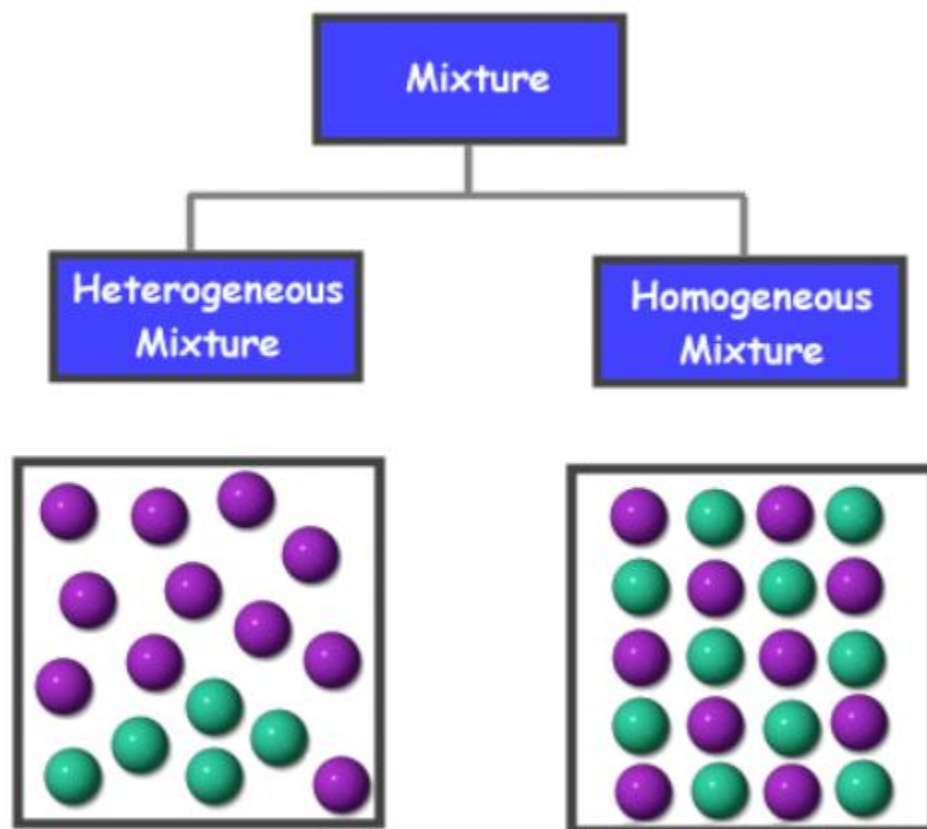
Mixture – Chocolate cake, Soil, Air

Pure substance – Water, Copper, Hydrogen

## Types of Mixtures

There are two categories of mixtures:

Homogeneous Mixtures and Heterogeneous Mixtures



### Homogenous Mixtures

- When we add sugar, water and lemon juice together they all uniformly mix with each other. Now it is no possible to separate these substances from the mixture.

**Such mixtures in which the components mix with each other uniformly are called Homogenous Mixtures.**

- The ratio of compositions of homogeneous mixtures can be different. **For Example**, one may add two spoons of sugar in lemonade while someone else may add only one spoon of sugar in their lemonade. Still, lemonade is a homogeneous mixture.

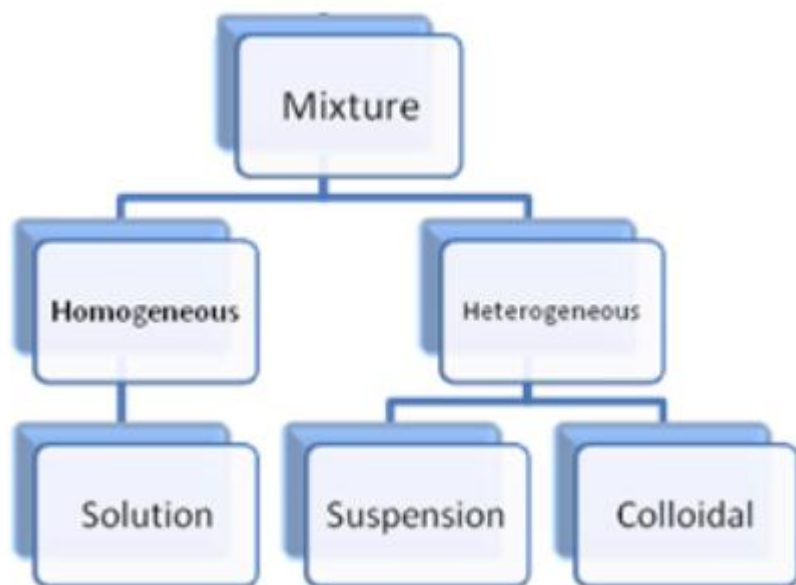
### Heterogeneous Mixtures

- The components in a heterogeneous mixture do not completely dissolve in each other and we can separate them by physical means. In other words, the composition of such mixtures is not uniform.

- **For Example**, If we mix sand in water the sand settles down in water after some time and we can separate it by filtration.

Here are a few differences between homogeneous and heterogeneous mixtures –

Homogenous Mixtures	Heterogeneous Mixtures
They have a uniform composition throughout	They have a non-uniform composition
We cannot separate the components of the mixture through physical processes	We can separate the components through physical processes
Components cannot be seen through naked eyes	Components can easily be seen through naked eyes
The mixture is in single phase throughout	The substances can be of two different phases and we may see separate layers of the substances
<b>Example:</b> A mixture of water and milk	<b>Example:</b> A mixture of oil in water



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