

Class IX: Chemistry
Chapter 2: Is Matter Around Us Pure

Top Concepts

1. Anything which has mass and occupies space is called matter.
2. Matter can be classified as pure substances or mixtures.
3. A pure substance may either contain constituent particles of only one kind or of different kinds. A pure substance has a fixed composition.
4. An element is a basic form of matter which cannot be broken down into simpler substances by any physical or chemical means.
5. Elements can be broadly classified as metals, non-metals and metalloids.
6. Metals are one category of elements that have lustre. They conduct heat and electricity. They are sonorous. They are malleable and ductile.
7. Non metals do not have lustre, are not sonorous and are bad conductors of heat and electricity.
8. Metalloids are elements having properties intermediate between those of metals and non metals.
9. A compound is a pure substance composed of two or more elements chemically combined in a fixed proportion. It can be broken down into simpler substances by chemical or electrochemical methods.
10. A mixture contains two or more elements or compounds which are mixed together in any proportion. In a mixture no new compound is formed. A mixture shows the properties of the constituent substances.
11. Mixtures are classified as homogeneous or heterogeneous mixture.
12. Mixtures whose components mix completely with each other to make a uniform composition are called homogeneous mixtures.
13. Mixtures whose components mix completely with each other to make a uniform composition are called homogeneous mixtures.
14. A heterogeneous mixture has a non-uniform composition.
15. The ability of a substance to dissolve in another substance is called solubility.
16. Homogeneous mixture of two or more substances is called a solution.
17. Component of a solution present in small quantity is called a solute.

18. Component of a solution present in large excess is called a solvent.
19. Solution with high solute concentration is called concentrated solution and those with low concentration is called dilute solution
20. A solution that has dissolved maximum amount of solute at any particular temperature is said to be a saturated solution.
21. If the amount of solute contained in a solution is less than the saturation level, it is called an unsaturated solution.
22. The concentration of a solution is the amount of solute present in a given amount (mass or volume) of solvent or solution.
23. Percentage by mass is one of the methods of expressing concentration of solution.
24. There are two kinds of heterogeneous mixtures, colloids and suspensions.
25. Colloids are mixtures with particle sizes from 1 nm to 1000 nm.
26. The component of colloid present in small amount is called dispersed phase.
27. The medium in which colloidal particles dispersed or suspend themselves is called dispersion medium.
28. In a colloidal system particles are always suspended and do not settle down. This constant colliding of the particles in continuous motion is called Brownian movement.
29. Scattering of a beam of light when light is passed through a colloidal solution is called the Tyndall effect
30. Colloids are classified according to the state (solid, liquid or gas) of the dispersed medium or dispersing medium and the dispersed phase.
31. Colloid in which dispersed medium is a liquid and dispersed phase is solid, it is called as sol.
32. Colloid in which both dispersed phase and dispersed medium are in liquid state is called as an emulsion.
33. Colloid in which dispersed phase is either liquid or a solid and dispersed medium is a gas is called as aerosol.
34. A suspension is heterogeneous mixture in which the solute particles do not dissolve but remain suspended throughout bulk of medium. Particles of suspension are visible to naked eye. Suspensions are heterogeneous mixtures with particles that have a size greater than 1000 nanometers.

35. Magnetic impurities can be separated from non-magnetic impurities by magnetic separation.
36. Volatile compounds can be separated from non-volatile compound by sublimation.
37. Mixtures of two or more liquid components can be separated by simple or fractional distillation or by using a separating funnel.
38. Simple distillation is used for separating liquids having a difference in boiling points of more than or equal to 25 K.
39. Fractional Distillation is used for separating liquids having a difference in boiling points of less than 25 K.
40. Liquids that are immiscible in each other differ in their densities and so can be separated by making use of a separating funnel.
41. The process, by which a soluble solid can be obtained from a solution by allowing the solvent to vaporize, is called evaporation.
42. Chromatography is used for separation of those solutes which dissolve in same solvent
43. Chromatography is a method of separating and identifying various components in a mixture, which are present in small trace quantities.
44. Mixture containing two solid substances out of which one is soluble in a particular solvent and other is insoluble can be separated by dissolving the soluble constituent in a suitable solvent and then separating the insoluble substance through filtration.
45. This process of separating the suspended particles of an insoluble substance, from a liquid, by rotating it at high speed is called centrifugation.
46. The change in which the shape, size, appearance or state of a substance may alter but its chemical composition remains the same is called a physical change. In a physical change no new substance is formed.
47. Any change that involves the formation of a new substance and leads to a transformation of chemical identity is called chemical change.
48. Chemical changes are usually accompanied with heat exchanges. Chemical changes are permanent changes which are usually irreversible.