

C/W
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Class - VIII
Sub - Chemistry

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Ch-1

Matter

1. Define:

(a) Matter: Matter is anything that has mass, occupies space and can be perceived by our senses.

(b) Intermolecular force of attraction: The space between the particles is called interparticular space or intermolecular space.

2. What are the three states of matter? Define each of them with two examples.

⇒ The three states of matter are solid, liquid, and gas.

Solid: A solid has a definite shape and a definite volume. Example: wood, stone, etc.

Liquid: A liquid has a definite volume but no definite shape. Example: water, alcohol, etc.

Gases: A gas has neither a definite shape nor a definite volume. Example: air, hydrogen etc.

3. Explain the interconversion of states of matter. What are the two factors responsible for the change of state of matter?

⇒ "The phenomenon of change of ^{one state of} matter into another and then back to the original state, without any change in its chemical composition is called inter-conversion of the state of matter.

The two factors responsible for the change of state of matter are:

- (i) Change in temperature.
- (ii) Change in pressure.

4. State the main postulates of kinetic theory of matter.

- ⇒ i) Matter is composed of very small particles called atoms and molecules.
- ii) The constituent particles of a kind of matter are identical in all respect.
- iii) These particles have spaces or gaps between them which are known as interparticular or inter-

- molecular spaces.

iv) There exist a force of attraction between the particles of matter which holds them together. This force of attraction is known as interparticular or intermolecular force of attraction.

v) Particles of matter are always in a state of random motion and possess kinetic energy, which increases with an increase in temperature and vice-versa.

5. What happens to water if :

i) It is kept in a deep freezer?

⇒ The water becomes solid (from liquid it changes to solid; ice). This is due to decrease of kinetic energy and motion of particles. So space between them decreases.

ii) it is heated?

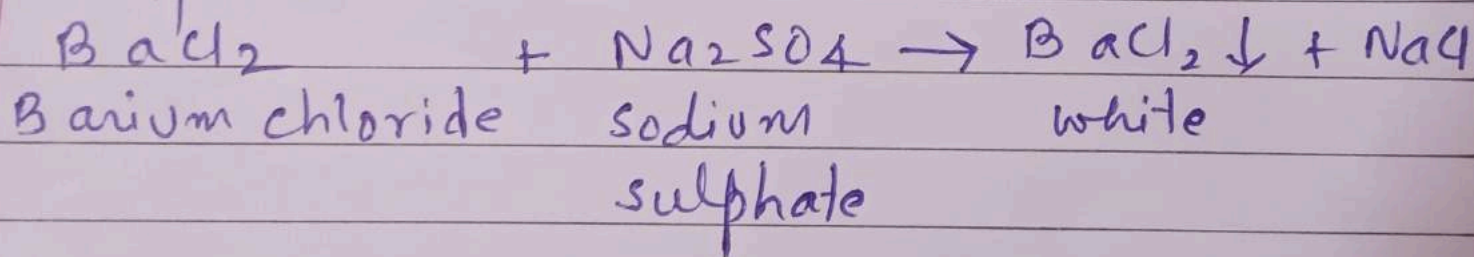
⇒ At the time when it is heated, the water changes into water vapour (from liquid to gaseous state). This is due to increase of kinetic energy resulting the particles to move far away from each other and increasing the space and decreasing the force

of attraction changing it into liquid again. This process is also known as melting.

6. a) State the law of conservation of mass.

⇒ "Lavoisier proposed a the law of conservation of mass which states that -
 "Matter can neither be created nor be destroyed in a chemical reaction."

When barium chloride solution is mixed with sodium sulphate, a white precipitate of barium sulphate is formed in the solution.



We also observe that the total mass of the apparatus and reactants are equal to the total mass of the apparatus and products.

7. Give reasons -

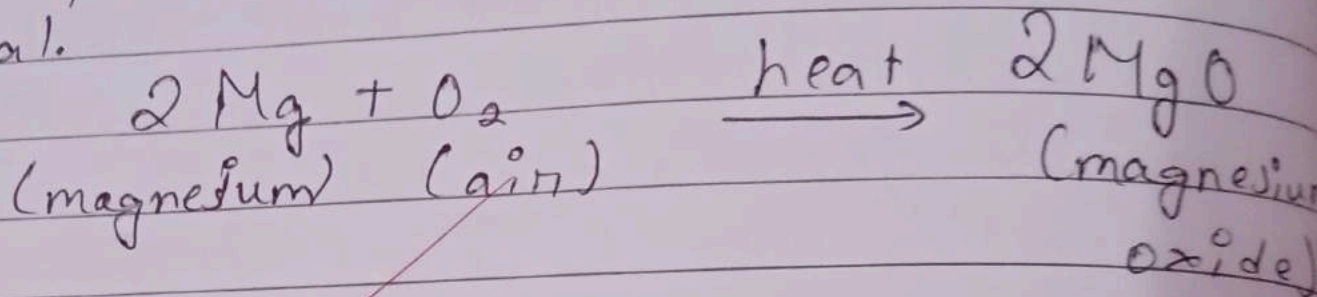
(a) A gas can fill the whole vessel in which it is enclosed because the particles of the ~~gas~~ gas is far away from each other resulting the force of attraction to be negligible therefore resulting it to fill up the ~~vessel~~ whole vessel.

(b) Solids cannot be compressed because the particles are tightly packed and doesn't allow to compress it as there is no space.

(c) Liquids can flow because there is intermolecular space between the molecules and the interparticular force is less resulting it to flow.

(d) When magnesium is burnt in air, a white solid - magnesium oxide is formed. The mass of magnesium oxide is more than the mass of magnesium. This is because the mass of oxygen used is not considered. If that is considered, the total mass of the reactants and

the products is found to be almost equal.



8. Fill in the blanks :

- (a) The change of a solid into a liquid is called Melting or fusion.
- (b) The process in which a solid directly changes into gas is called sublimation.
- (c) The change of water vapour into water is called condensation.
- (d) The temperature at which a liquid starts changing into its vapour state is Boiling point.

9. Give example for each of the following:

a) The substance which sublime.
⇒ Campher, naphthalin.

b) The substance which do not change their state on heating.

⇒ Graphite, Oxygen.

10. Define:

- a) Diffusion: The intermixing of two or more substances due to the motion of their particles in order to get a uniform mixture is called 'diffusion'.
- b) Brownian Motion: The haphazard, random motion of suspended particles on the surface of a liquid or in air is called brownian motion.

11. When all the sodium chloride is dissolved in water, we will notice that there is no increase in the level of water. This shows that there must be some space between the particles of water in which the salt particles get accommodated when dissolved.

12. It is observed that after some time, the reddish brown vapours of bromine also spread out into the upper jar. This mixing is called diffusion. The rate of diffusion is the fastest in gasses and the slowest in solids. It increases with an increase in temperature.

13. Why can a piece of chalk be broken easily into smaller pieces while a coal piece can not be broken easily?

Ans A piece of chalk can be broken easily into smaller pieces, because the particles of the chalk are loosely packed whereas a coal piece can not be broken easily because the particles of coal are tightly packed.