

1 Matter is anything that contains mass and occupies space, it is made up of tiny particles called atoms and molecules

2 Rigidity, ^{Inter} molecular forces of attraction,

3 Inter-molecular space defines the small gaps or spaces between the particles of matter. They vary in the different states of matter, depend upon the kinetic energy of the particles. Like in solids the least inter-molecular space, liquids & medium, gases - highest

4 The Inter-molecular forces of attraction keep the molecules of matter together. They are the highest in solids, less in liquids, least in gas

5 (a) and (b)

6 Solids	Liquids	Gases
• Solids are made up of tiny particles called molecules	• Liquids are made up of tiny particles called molecules	• Gases are made up of tiny particles called molecules
• molecules are tightly packed	• molecules are loosely packed	• molecules are very loosely packed

• molecules have very high forces of attraction; they only vibrate about their mean position

molecules have lesser forces of attraction between them; they are free to move anywhere in the liquid

7 'The change of state' is the term which defines the change of matter into any other state of matter i.e. solid, liquid, gas except its current state

8 Melting point

Boiling point

• It is the fixed point of temperature at which a solid changes into its liquid state

It is the fixed point of temperature at which a liquid starts changing into its gaseous state.

• eg: melting point of ice = 0°C

Boiling point of water = 100°C

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• The process of change of a vapour into a liquid state by rejecting heat at a constant temperature is called condensation. For example when the water vapour from boiling water reaches the lid, it condenses back to water droplets as it cannot get heated. (At a constant temperature)

The process by which a solid, on heating changes directly into its gaseous form without changing into the intermediary liquid state is called sublimation. For example, Ammonium chloride when heated in a test tube (or any other container) changes directly into its gaseous state.

1011

Aim - To demonstrate that a substance absorbs heat during melting without change in its temperature.

Materials required - Tripod stand, Bunsen burner, test tube holder, test tube, solid wax, thermometer, boiling water, beaker.

Procedure - The solid wax is kept in a test tube and clamped to a test tube stand and directed inside the beaker of water. The thermometer is also clamped to it and directed into the test tube. The burner is turned on and the water starts boiling.

Observation - The temperature of wax constantly rises but stops just at 55°C when it starts to melt. Then temperature, after some time rises again.

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Here, as the ^{ice} water stops increasing in temperature at night 0°C , thus we conclude that the melting point of ice is 0°C .

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Aim - To demonstrate that water absorbs heat ^{during boiling} at a constant temperature.

Materials required - Beaker, burner burner, tripod stand, thermometer, test tube stand.

procedure - Water is kept in a beaker and heated, the thermometer is clamped to a test tube stand and connected into the beaker.

observations - The ~~thermometer~~ thermometer reading constantly rises and gets constant at 100°C for some time.

conclusion - Thus we conclude that the ~~boiling~~ boiling.

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a) 0°C

b) 100°C

17 Evaporation is the process of change of a liquid, slowly and at all temperatures into its vapour state

- 18
- i) Moisture in the air
 - ii) Nature of the liquid
 - iii) Temperature of the liquid

19 Wet clothes dry more quickly on a warm dry day since the air is moisture-free and readily accepts the water vapours formed by evaporation.

20 Water in a dish evaporates more quickly as compared to a bottle. Since the area of contact with the atmosphere is more in a dish than a bottle

21 Volatile liquids tend to evaporate more quickly so, they are kept in a tight bottle to avoid their contact with atmosphere.

22 Boiling point of water = 100°C .

23 Every liquid requires heat to evaporate, so the ~~heat~~ cooling effect is produced because the liquid which evaporates takes the heat from its surroundings.

24 When some amount of spirit or Alcohol is put on the palm of, it evaporates quickly and produces a cooling sensation because it takes heat from the palm from evaporation.

- 25
- Water in earthen pots remains cool even after during summer days
 - A wet strip of cloth is put on the forehead of a person having high fever

26 In the earthen pots, there are very small pores on the surface from which water leaks out continuously and evaporates, thus absorbing the water still inside the pot and keeping it cool.

27 A patient with high fever also has ~~low~~ high temperature so to cool him down, a wet cloth strip is put on the forehead. When the water evaporates from it, it takes the heat from the body.

28 Sublimation is the process by which a solid changes directly into gas state without going through intermediate liquid state. For example - Naphthalene balls when kept open become smaller in size.

29 The size of naphthalene balls decrease when left open because they sublime when in contact with the atmosphere and change into their vapour state.