

MATTER

CHAPTER NO.1 SUB: PHYSICS

CHANGING YOUR TOMORROW

LEARNING OUTCOMES

• **Students will be able to :**

- Demonstrate different change of states.
- Differentiate between solids, liquids and gases on the basis of their molecular models.
- Define melting.
- Define freezing.
- Define boiling, condensation, evaporation.
- Differentiate between boiling and evaporation.

CHANGING YOUR TOMORROW

POINTS TO BE COVERED

- Melting
- Freezing
- vaporization or boiling
- Condensation
- Evaporation.

CHANGING YOUR TOMORROW

INTRODUCTION

- Discuss the three states of matter solid, liquid and gas on the basis of molecular model.

STATES OF MATTER

Three States of Matter



Solid

- Particles (e.g. solids) are tightly packed together in a regular pattern.
- Particles in a solid will vibrate but cannot move past each other.
- Solids retain their shape.



Liquid

- Particles in a liquid are close together with no regular pattern.
- Particles in a liquid flow and can easily move (e. this part can shatter).
- Liquids assume the shape of their containers.



Gas

- Particles in a gas are well separated with no regular pattern.
- Particles in a gas vibrate freely at high speeds.
- Gases assume the shape of their containers.



https://youtu.be/o2qM4o8e_Vo

MELTING

- The change from solid state to liquid state on heating at a fixed temperature is called melting.



Melting point of a solid

- The temperature at which a solid changes into liquid without further increase in temperature is called melting point of the solid.



Freezing

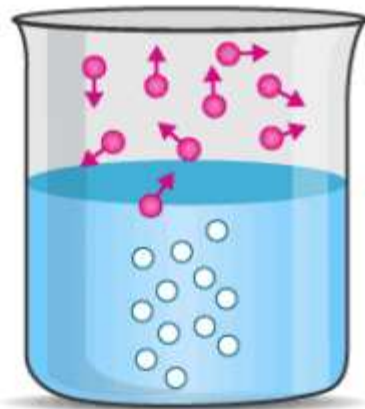
- The change of state of a substance from the liquid state to its solid state on cooling(rejecting heat) is called freezing.



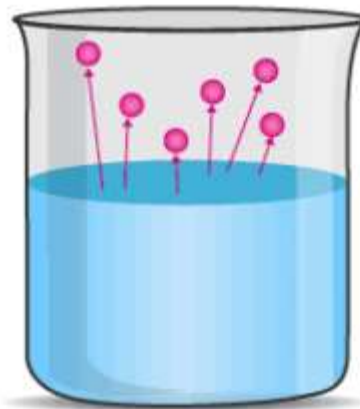
Melting By Molecular Model

- In a solid, molecules are closely packed.
- They have strong intermolecular force between them.
- On heating, the kinetic energy of molecules increases .
- At a particular temperature, called melting point, the molecules get far separated from each other.
- The state of substance becomes liquid.

Vaporization or boiling



Boiling



Evaporation

Vaporization



VAPORIZATION

- The change from liquid state to gaseous state on heating at a constant temperature by absorption of heat is called vaporization or boiling.
- The temperature at which a liquid changes into vapour without further increase in temperature is called boiling point of the liquid.

CONDENSATION



- **Condensation** is the change of water from its gaseous form (water vapor) into liquid water.

https://youtu.be/Y9cASQn_SEw

EVAPORATION

- <https://youtu.be/SfzUBe7lp44>
- <https://youtu.be/k9l0s5zVibo>
- <https://youtu.be/e27UguK78C4>

Evaporation

- **EVAPORATION:** Is a process in which a liquid changes into vapour at all temperatures from the surface of a liquid.
- **Rate of evaporation:**

Rate of evaporation depends on the following five factors.

1. The temperature of liquid
2. The area of the exposed surface.
3. The nature of liquid.
4. The flow of air above the liquid.
5. The presence of moisture or liquid.

HOME ASSIGNMENT

- Exercise: B-10,11,12.

THANKING YOU
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