Gas

1. Properties of Gases

No Definite Shape or Volume:

- o Gases do not have a fixed shape or size.
- o They spread out to fill the entire container.

Compressibility:

Gases can be compressed a lot \rightarrow Their volume decreases when pressure is applied.

• Fluidity:

Gases can flow and take the shape of their container, similar to liquids.

• Expansion:

Gases always expand to fill the entire space of the container.

If the container is open, gases escape into the air.

Examples of gases:

- o Oxygen $(O_2) \rightarrow$ Used for breathing.
- o Carbon dioxide $(CO_2) \rightarrow Used$ by plants for photosynthesis.
- o Liquefied Petroleum Gas (LPG) \rightarrow Used for cooking.
- o Helium \rightarrow Used in balloons.
- o Compressed Natural Gas (CNG) \rightarrow Used in vehicles.
- o Nitrogen \rightarrow Used to preserve food.

2. Uses of Gases:

i. Cooking Gas (LPG):

- o LPG is stored in cylinders in liquid form.
- o When released, it turns into gas and is used for cooking.

ii. Oxygen for Breathing:

- o In hospitals, patients use oxygen masks for breathing.
- o The oxygen gas flows from a tube attached to a cylinder.

iii. Helium in Balloons:

- o Helium gas is lighter than air, making balloons float.
- o Even though you can't see the gas, it is there inside the balloon.

iv. Scuba Diving:

- o Scuba divers use oxygen tanks to breathe underwater.
- o The tank releases oxygen gas through a breathing tube.

3. Interesting Facts About Gases

- Even when water looks still in a glass, its particles are constantly moving.
- Helium-filled balloons float because helium is less dense than air.
- Rockets use liquid hydrogen and oxygen gases as fuel for propulsion.