

Distinction between Solids, Liquids and Gases

SOLID	LIQUID	GAS
★ It is a form of matter having a rigid structure and firm shape.	They are substances flowing freely with no permanent shape but a definite volume.	It is a state of matter which doesn't have a shape but takes shape of the container.
★ It has the lowest kinetic energy.	It has more kinetic energy than solids.	It has the highest kinetic energy.
★ These are hard to compress.	★ You can compress them with a little difficulty.	★ These are easily compressible.
★ It has a fixed shape and volume.	It has no fixed shape but has a ^{fixed} volume.	It has neither a definite shape nor a definite volume.
★ Molecules are regular and arranged closely.	Randomly molecules, arranged sparsely.	Molecules are in random motion and are arranged sparsely.
★ They have very less intermolecular space.	They have more intermolecular space than solids.	These have the most intermolecular space.
★ They can't flow.	These flow from a higher to lower level.	They flow in all directions.
★ They don't require a container for storage.	They require a container for storage.	These require a close container for storage.
★ They have the max. intermolecular force of attraction.	These have a ^{less} medium intermolecular ^{force} attraction _{on} than solids.	They have the min. intermolecular force of attraction.

HOME ASSIGNMENT

Q Write down 5 general properties of solids, liquids, gases.

A- Solids

1) Describe the molecular model for a liquid. How does it explain that a liquid has no definite shape, but has a definite volume?

A- Here the molecules are less tightly packed as compared to solids and also there is less force of intermolecular attraction. The intermolecular dist. is greater than that in solids. Thus, they don't have a definite shape but acquire the shape of the vessel in which they are contained but have a definite volume at a given temp.

2) How do the solids, liquids and gases differ in their following properties? (a) size (b) shape (c) density.

A-

	Size	Shape	Density
Solids	They have a definite ^{size} shape.	They have a definite shape.	They are highly dense.
Liquids	Indefinite.	Indefinite.	Less dense than solids.
Gases	Indefinite.	Indefinite.	Less than ^{dense than} them than both of a.