

Changes of States: Solids

A solid is a type of matter that has a definite shape and volume. It is made up of tiny particles called molecules that are closely packed together and vibrate in place. However, when heat is added to a solid, the molecules begin to move faster and can eventually change their arrangement, causing the solid to change its state.

The process of changing from a solid to a liquid is called melting. When a solid is heated, its molecules gain energy and start to move faster. As the molecules move around more, they overcome the attractive forces holding them in a fixed position and start to slide past each other. This causes the solid to become less rigid and eventually turn into a liquid.

The opposite process, changing from a liquid to a solid, is called freezing. When a liquid is cooled, its molecules lose energy and slow down. As the molecules slow down, the attractive forces between them become stronger, and they start to lock into a fixed position. This causes the liquid to become more rigid and eventually turn into a solid.

Another way that a solid can change its state is by a process called sublimation. Sublimation occurs when a solid goes directly to a gas without passing through the liquid state. This can happen when the solid is heated or exposed to a low pressure environment. An example of this is dry ice, which is solid carbon dioxide. When it is exposed to room temperature, it sublimates and turns into a gas.

In conclusion, a solid can change its state by melting, freezing, or sublimation. These changes happen when the solid is heated or cooled, and they are caused by the movements of the tiny particles that make up the solid.

QUESTIONS:

1. What is the process called when a solid changes into a liquid and what happens to the particles during this process?
2. Can a solid change directly into a gas? If so, what is this process called and how does it happen?
3. What factors can cause a solid to change its state and become a liquid or gas? Can you give an example?
4. What happens to the shape and volume of a solid when it changes into a liquid or gas?