

What is a state of aggregation?

Every material in our environment is in a particular state, like liquid, solid or gaseous. Every material can be in every state. Sometimes it is quite difficult to imagine materials like iron in a gaseous state, but if a certain level of
temperature
is reached, also iron can be in a gaseous state.

This statement leads us to the next important characteristic concerning states of aggregation: Every material can be in every state of aggregation and the state of aggregation depends on the material's temperature. For example water is a material, which you know in every state. Water in a solid state you can find in winter-times outside, when it is snowing. Water in a liquid state you are drinking and water in a gaseous state you find in the sky, when it is cloudy. So there is one material (in this case:water), in three different states. The state of water depends on special temperatures. Water changes it state from liquid to solid, by 0 degrees or lower. To change the state of water from liquid to gaseous you have to heat it up to 100 degrees or more.

Now that you know the states of aggregation of water and the temperatures, they are depending on. You can have a look at the chart below for more examples:

	solid	fluent	gaseous
Water	<0 °C	0 °C	>100 °C
Iron	< 1538 °C	1538 °C	
Gold	< 1064 °C		

Helium	<-272	°C	-272	°C
Candle Wax	<60	°C	60	°C

(>)= more than. >10 °C means therefore: more than ten degrees.

(<)= less than. <10 °C means therefore: less than ten degrees.

How is the process from one state to the other state called?

The process, when a material changes its state by heating or cooling the material are differently called:

From solid to liquid: melting

From liquid to gaseous: evaporation

From gaseous to solid: consolidation

From gaseous to liquid: condensation

From liquid to solid: solidification

From solid to gaseous: sublimation