

AQA Physics GCSE

4.3.1 - Changes of State and Particle Model

Flashcards

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What is the definition of density? State the relevant equation with units.



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- The mass per unit volume of a material
 - $\rho = m/v$
- Density (kg/m^3), Mass (kg), Volume (m^3)



State the different states of matter in order (least to most) of density of atoms.



State the different states of matter in order (least to most) of density of atoms.

- Least dense: Gas
 - Liquid
- Most dense: Solid



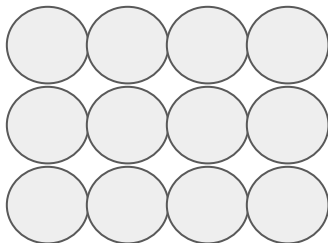
Describe the particle arrangement of a solid.



Describe the particle arrangement of a solid.

Tightly packed in a regular arrangement.

Particles can only vibrate on the spot.

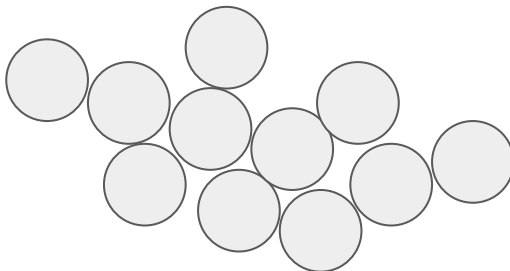


Describe the particle arrangement of a liquid.



Describe the particle arrangement of a liquid.

Close together, but with an irregular arrangement. They can flow over each other.



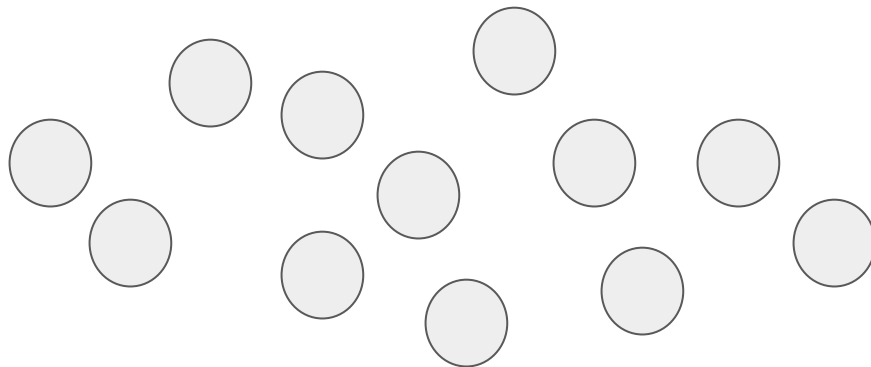
Describe the particle arrangement of a gas.



Describe the particle arrangement of a gas.

Separated, with no regular arrangement.

Particles can move freely.



What is always conserved when a substance undergoes a change of state?



What is always conserved when a substance undergoes a change of state?

Mass



How does a change of state differ from a chemical change?



How does a change of state differ from a chemical change?

In a change of state, the material can return to having its previous properties if the change is reversed.



What is sublimation?



What is sublimation?

When a solid changes into a gas without passing through a liquid state.



What is evaporation?



What is evaporation?

When a liquid changes into a gas state.



What is is the opposite of evaporation?



What is the opposite of evaporation?

Condensation, which is when a gas changes into a liquid state.



When water boils in an open pan, why does the mass of the pan of water appear to decrease?



When water boils in an open pan, why does the mass of the pan of water appear to decrease?

Some of the water will evaporate and turn into water vapour. This will leave the pan meaning the mass of the pan will decrease.

The mass of the whole system however remains constant.



Explain the processes involved when a bathroom mirror mists up.



Explain the processes involved when a bathroom mirror mists up.

- Hot water evaporates to form water vapour
 - This water vapour lands on the cooler mirror
- The vapour condenses and returns to liquid state on the mirror's surface

