**Diffusion**

Diffusion is the spreading-out of particles from an area of high concentration to an area of low concentration.

**Diffusion in gases**

If you spray air-freshener in a classroom, the smell will spread across the room slowly. As the gas particles spread across the room they bump into air particles which slow them down.

E.g. 1 Bromine in 2 gas jars. The bromine vapour will diffuse up into the top jar until both jars have an equal concentration.



E.g. 2 ammonia and HCl along a narrow tube. When the 2 gases meet the form a white solid, ammonium chloride.

NH3(g) + HCl(g) 🡪 NH4Cl(s)



HCl

NH3



The white solid forms a ring in the tube. The white ring forms closer to the HCl end as NH3 is lighter and so diffuses faster along the tube.



**Diffusion in liquids**

If a dark purple solid is added to a beaker of water, the purple colour will spread out and eventually all of the water will be purple.



Diffusion in liquids is much slower than in gases, especially if the liquid is still.