

Increasing the concentration of a reagent that is not in excess will increase the heat produced. Although increasing the concentration of a reagent that is in excess will have little effect.

Doubling the concentration of the reagent that is not in excess will also double the heat given off.

Thermal Decomposition

We need to make sure that the crystals have been heated sufficiently so that all of the water has been removed. If it's not all removed the percentage water of crystallisation will be less than it should be. To prevent this we do a check to see that further heating of the sample does not lead to decrease in the mass.

The anhydrous solid could also decompose. Which could break off the anion of the crystal and produce a gas so that it is seen as more water of vapour is given off. Gases such as hydrogen chloride gas. To stop this the crystals need to be heated with care.

Impurities may also be left in the reacting vessel and could decompose to further increase the amount of water given off.

Water may be reabsorbed into the crystals after the experiment as they cannot be weighed straight after because they will be too hot. Therefore after heating we keep the crystal in dry conditions called a desiccators.

The solid needs to be heated with a blue flame.

Measurement of the rate of reaction

Rate of reaction doubles for every 10°C in temperature.

When drawing graphs think whether this change may increase or decrease the rate of reaction.

Increasing the concentration of a reagent will increase the amount of product obtained and the rate of reaction.

