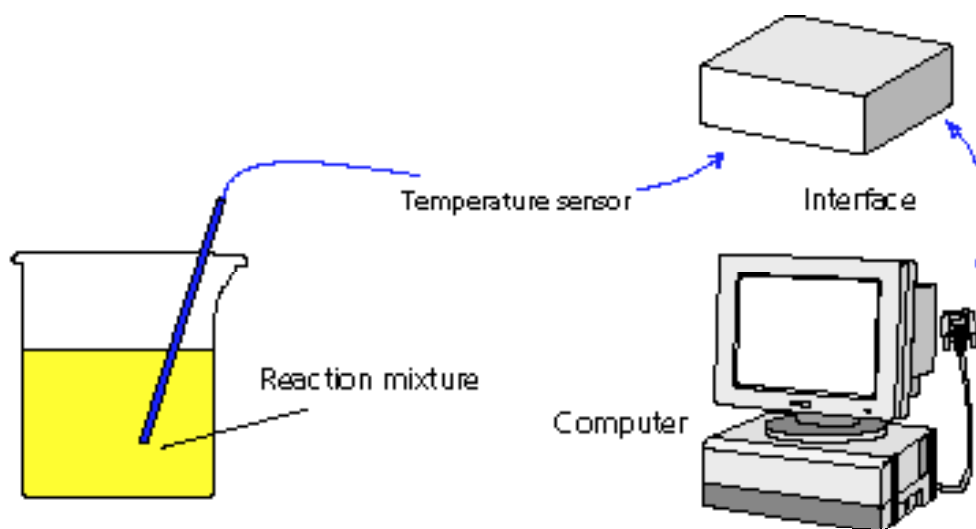


Heats of reaction



As acid reacts with alkali, heat is evolved. This is the heat of neutralisation. This can be easily monitored using a temperature sensor. In this experiment the temperature is monitored continuously as acid is added to alkali.

Apparatus

pH Indicator solution, 50 cm³ 1 M sodium hydroxide NaOH, 10 cm³ 5M hydrochloric acid HCl, 200 cm³ beaker, interface, temperature sensor.

Setting up

Connect the temperature sensor to socket 1 on the interface.

Place the temperature probe in a beaker containing 25 cm³ alkali and pH indicator.

Some systems recognise the sensors you attach automatically, in others you do this yourself. If the sensor is adjustable, set a range of around 40 degrees.

Recording the data

Record for 3 minutes. Add 5 cm³ acid and stir.

Using the results

How does the graph show you the mixture is getting hotter?

When during the reaction is the mixture getting hotter fastest?

When does the mixture start to cool? Why is this?

How would other acids and alkalis behave?

Save your data on disc and print the graph.

