

# AQA C5 ENERGY CHANGES COMBINED FOUNDATION

## Required practical – Temperature changes

Key Word	Definition
endothermic	A reaction where energy is taken in from the surroundings so the temperature of the surroundings decreases.
exothermic	A reaction where energy is transferred to the surroundings so the temperature of the surroundings increases.
activation energy	The minimum amount of energy that colliding particles must have for a reaction to take place.
reaction profile diagram	A reaction profile diagram shows the overall energy changes in a reaction.
reactant	A chemical you start with before a reaction begins.
product	A chemical made after a reaction takes place.

### Example of reactions

**Endothermic reactions:**  
Thermal decomposition and sports injury packs.



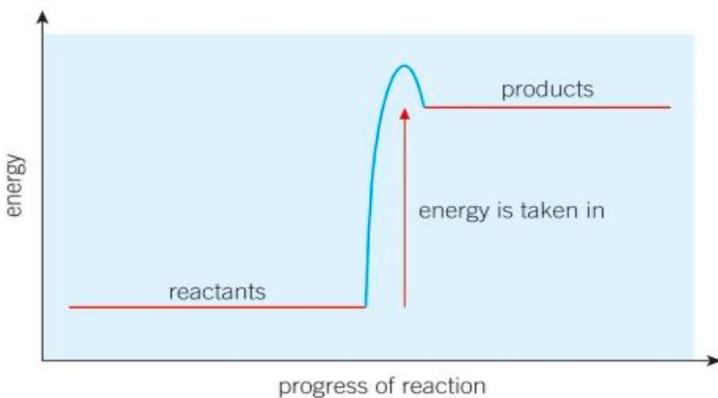
**Exothermic reactions:**  
Combustion, hand warmers and neutralisation.



### REACTION PROFILE DIAGRAMS

In reaction profile diagram, the energy change in a reaction, is the difference between the reactants and products.

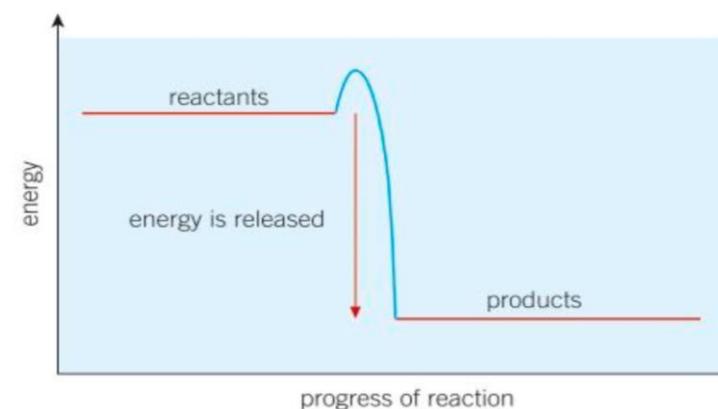
#### Endothermic reaction



In an endothermic reaction, energy is taken in from the surroundings. The temperature of the surroundings therefore decreases.

The energy of the products is higher than the energy of the reactants.

#### Exothermic reaction



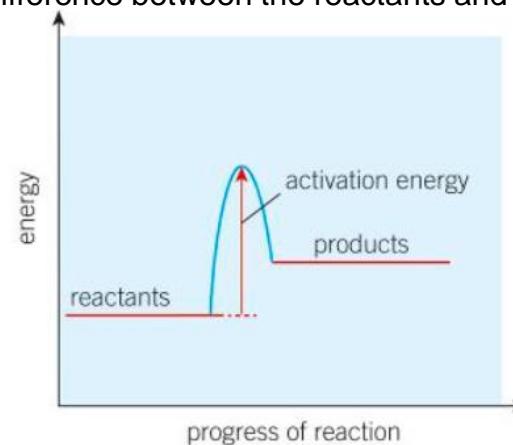
In an exothermic reaction, energy is released to the surroundings. The temperature of the surroundings therefore increases.

The energy of the reactants is higher than the energy of the products.

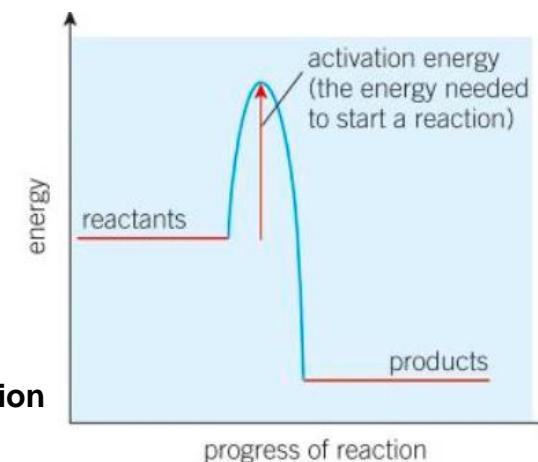
### ACTIVATION ENERGY

In order for a reaction to take place, collisions must occur between particles. The activation energy is the minimum amount of energy needed, for particles to successfully collide and react.

The activation energy can also be labelled on reaction profile diagrams. This is the difference between the reactants and the top of a profile diagram.



#### Endothermic reaction



#### Exothermic reaction