

0 1

This question is about energy changes.

0 1 . 1

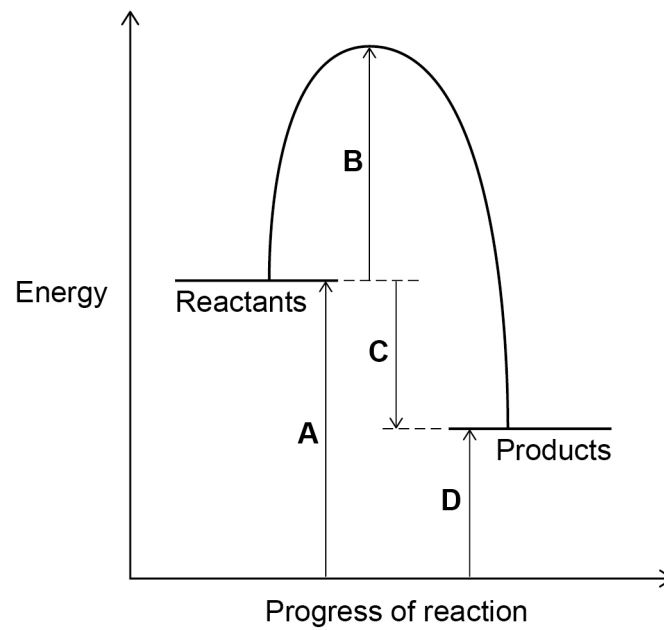
Which of these items uses an endothermic reaction?

[1 mark]Tick (✓) **one** box.

Hand warmer

Sports injury pack

Self-heating can

Figure 1 shows the reaction profile for an exothermic reaction.**Figure 1**

0 1 . 2 Which letter represents the activation energy for the reaction?

[1 mark]

Tick (✓) **one** box.

A B C D

0 1 . 3 Which letter represents the overall energy change for the reaction?

[1 mark]

Tick (✓) **one** box.

A B C D

0 1 . 4 Complete the sentence.

Choose the answer from the box.

[1 mark]

lower than

the same as

higher than

In an exothermic reaction the energy of the products

is _____ the energy of the reactants.

0 1 . 5 A student measured the temperature at the start and at the end of a reaction.

Name the apparatus used to measure the temperature.

[1 mark]

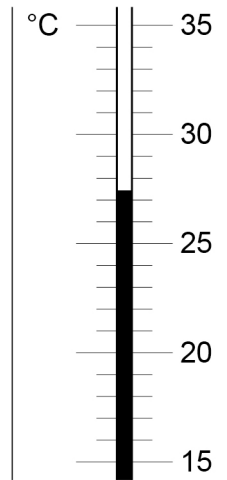
Question 1 continues on the next page

Turn over ►



0 1 . 6 Figure 2 shows the temperature at the end of the reaction.

Figure 2



Complete **Table 1**.

Use **Figure 2**.

[2 marks]

Table 1

Temperature at start in °C	14.3
Temperature at end in °C	
Change in temperature in °C	



Question	Answers	Extra information	Mark	AO / Spec. Ref.
01.1	sports injury pack		1	AO1 5.5.1.1
01.2	B		1	AO1 5.5.1.2
01.3	C		1	AO1 5.5.1.2
01.4	lower than		1	AO1 5.5.1.2
01.5	thermometer		1	AO1 5.5.1.2
01.6	27.4 (°C)	allow values in the range 27.2– 27.5 (°C)	1	AO2 5.5.1.1
	(27.4–14.3 =) 13.1 (°C)	allow correct subtraction of incorrect temperature reading	1	
Total			7	