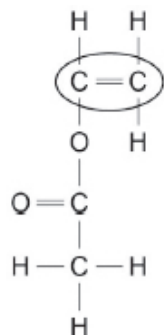


## Mark schemes

## Q1.

(a)



1

(b) orange (bromine water)

*allow yellow / brown*

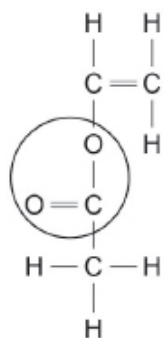
1

turns colourless

*allow is decolourised**ignore clear*

1

(c)



1

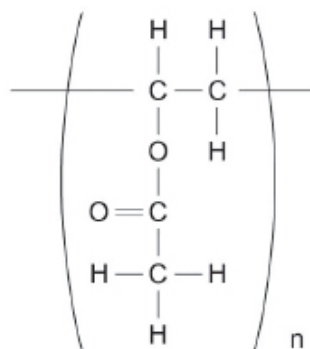
(d)  $2 \text{C}_4\text{H}_6\text{O}_2 + 9 \text{O}_2 \rightarrow 8 \text{CO}_2 + 6 \text{H}_2\text{O}$ *allow multiples**allow 1 mark for* *$\text{C}_4\text{H}_6\text{O}_2 + \text{O}_2 \rightarrow$  with incorrect / no multipliers**allow 1 mark for* *$\rightarrow \text{CO}_2 + \text{H}_2\text{O}$* *with incorrect / no multipliers**ignore state symbols*

3

- (e) single C-C bond in polymer repeating unit  
do **not** accept extra atoms added to trailing bonds

1

n after polymer repeating unit  
an answer of



scores 2 marks

1

- (f) addition polymer

1

- (g) thermosoftening

allow thermoplastic

1

- (h) cross-links between (polymer) chains

allow covalent bonds between (polymer) chains

1

(so) too much energy needed to overcome the cross-links

allow (so) too much energy needed to overcome the covalent bonds between (polymer) chains

1

[13]