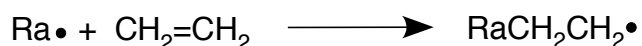


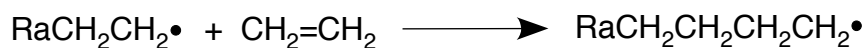
## Chemguide – answers

### FREE RADICAL POLYMERISATION OF ETHENE

- Temperature: about 200°C  
Pressure: about 2000 atmospheres  
Initiator: a small amount of oxygen
- a) Free radicals are formed by reaction between a small amount of ethene and the oxygen present.  
b) The free radical attaches to an ethene molecule using one of the electrons in the pi bond. The other electron from the pi bond remains on the other carbon atom, producing a new free radical.



If this radical hits another ethene molecule, the chain lengthens:



... and so on.

- Termination happens when two of the radicals combine together without forming a new radical:

