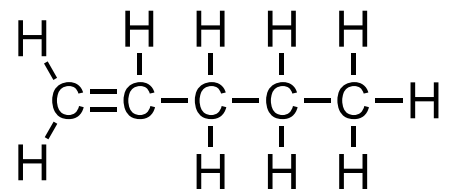


Markovnikov's rule

The full structural formula of an unsaturated hydrocarbon (compound X) is given below:



- State the IUPAC name of compound X.
- State the type of reaction that compound X undergoes with hydrogen bromide (HBr).
- State and explain the major product in the reaction of compound X with HBr.
- Describe, using a diagram, the reaction between compound X and HBr using curly arrows to represent the movement of electron pairs.

Answers:

- Pent-1-ene
- Electrophilic addition.
- 2-bromopentane – the electrophilic portion of the molecule (the hydrogen atom) will bond to the carbon that is bonded to the greatest number of hydrogen atoms.

This results in the formation of a secondary carbocation which is more stable than a primary carbocation (formed if the hydrogen atom bonded to the second carbon atom in the molecule).

d.

