



Organic Chemistry Revision Sheets

Alkenes | Electrophilic Addition (with HBr)

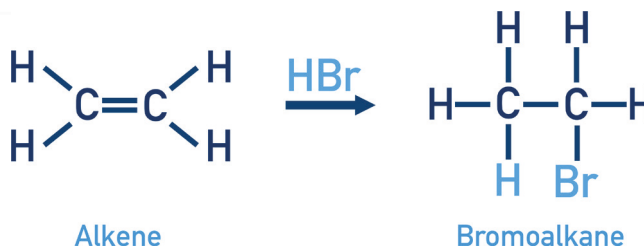
Reaction

REACTANTS: Alkene and HBr (Hydrogen Bromide)

PRODUCT(S): Bromoalkane

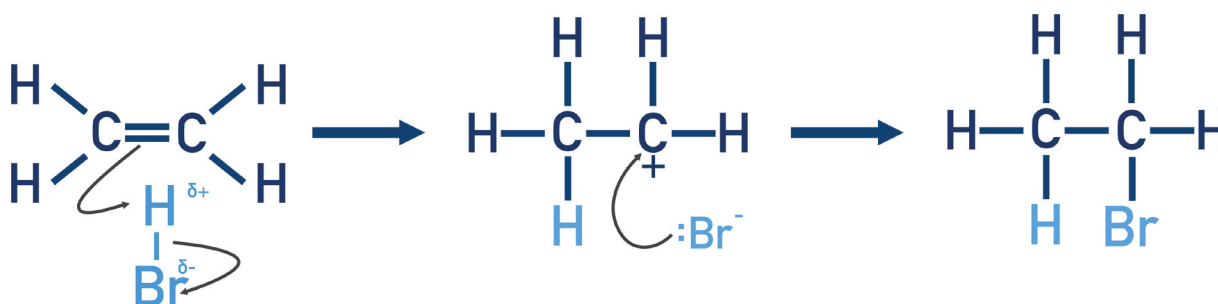
REACTION TYPE: Electrophilic Addition

REACTION:
(example of
ethene)



Mechanism

HBr acts as an **electrophile** because its hydrogen atom (with a partial positive charge) accepts an electron pair from the carbon-carbon double bond. During the reaction the carbon-carbon double bond breaks, forming a positively charged carbon ion (carbocation). The negatively charged bromide ion bonds with the carbocation. HBr is 'added' across the carbon-carbon double bond. **Addition reaction.**



Notes:

- If a primary or secondary carbocation can be formed during the reaction, **the secondary carbocation will form more readily than the primary carbocation** - creating 'major' and 'minor' products*.
- The secondary carbocation is more stable due to increased positive inductive effect from neighbouring alkyl chains.
- *The product mixture will contain more of the major product than the minor product.

