



Organic Chemistry Revision Sheets

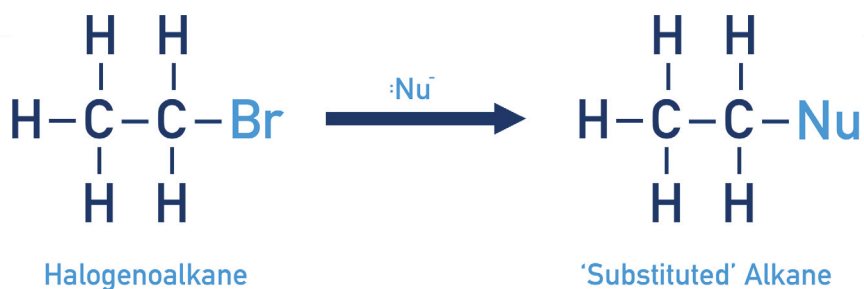
Halogenoalkanes | Nucleophilic Substitution (S_N2)

Reaction

REACTANTS: Halogenoalkane and Nucleophile

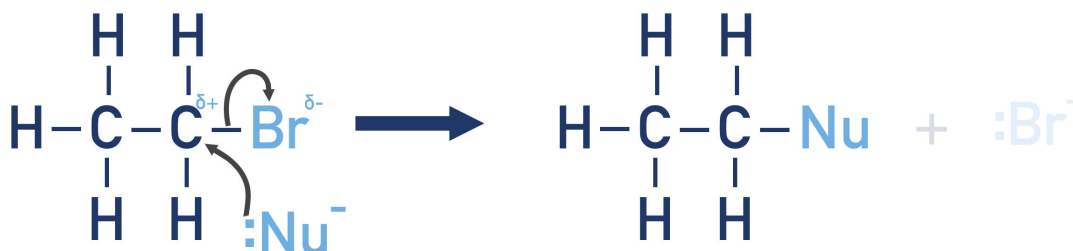
REACTION TYPE: Nucleophilic Substitution, S_N2

REACTION:
(example of
bromoethane)



Mechanism

S_N2 reaction mechanisms have only one step. The nucleophile attacks the carbon-halogen bond directly, forming a new carbon-nucleophile bond as the carbon-halogen bond breaks.



Notes:

- The **S_N2 reaction occurs (usually) with primary halogenoalkanes** and only slightly with secondary halogenoalkanes. This is because the carbon-halogen bond in the primary halogenoalkane is more available for the nucleophile to attack than the partially positive carbon directly.
- S_N2 reaction is **faster** than S_N1 reaction.
- S_N1 reaction occurs mainly with tertiary halogenoalkanes (and, to a lesser extent, secondary halogenoalkanes).