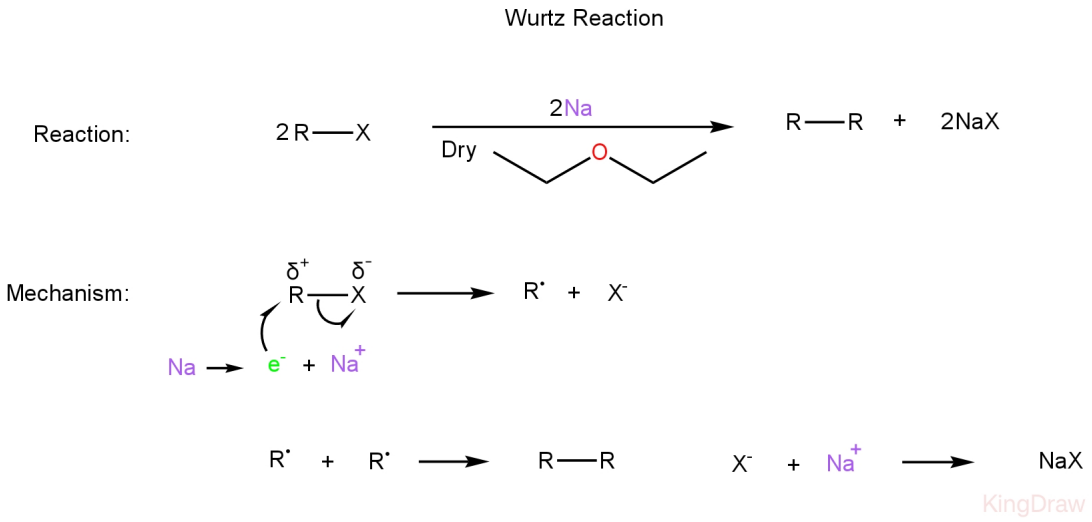
Wurtz Reaction

1 Reaction and Mechanism



2 Why dry Et_2O is used instead of moisture?

Water and Sodium metal react vigorously to form Sodium Hydroxide and evolve hydrogen gas, to avoid this reaction taking place dry environment is preferred.

3 Why Et_2O is used?

Et_2O is a PAS, hence it solvates only the cationic part (+).

4 Reaction Observations

i. Free radical or C^- obtained as intermediate.

ii. Breaking of RX bond is RDS.

iii. ROR for RX, $RI > RBr > RCl$

iv. *Stability of* $R^{\cdot} \propto ROR$

v. RF doesn't react.

vi. CH_4 can never be obtained.

vii. Only symmetrical even number of ${}^{12}_{6}C$ obtained in very good yield.

viii. Unsymmetrical compound obtained in very poor yield.