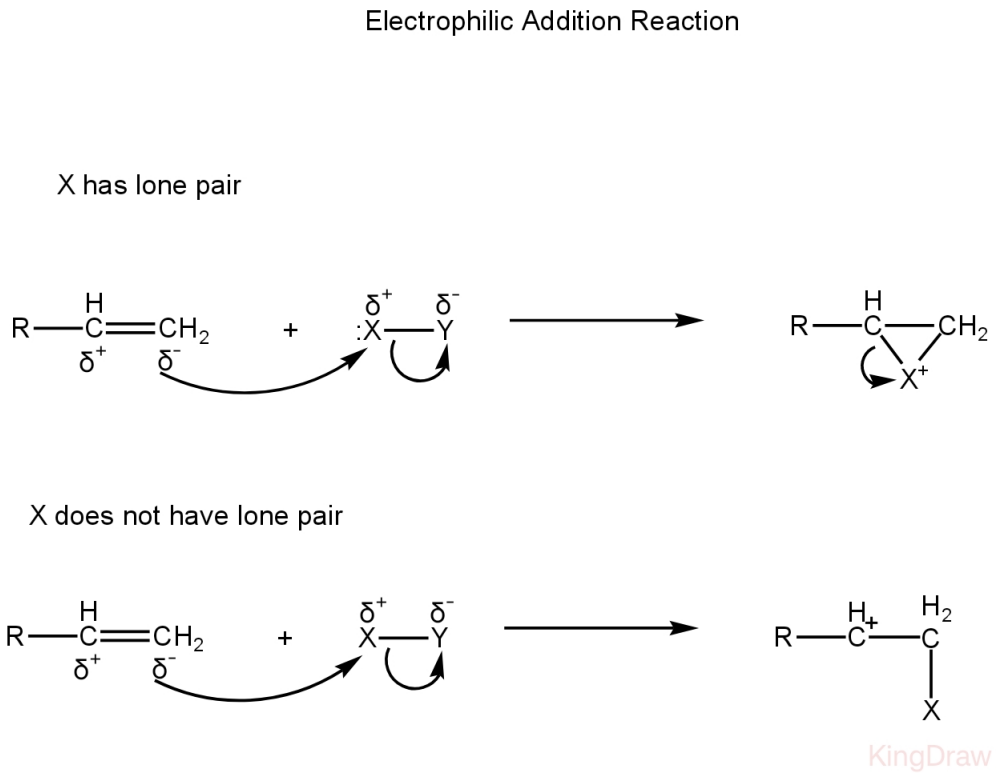
Electrophilic Addition Reaction

1 Reaction and Mechanism



2 Reaction Observations

2.1 X doesn't have lone pair

i. C^+ obtained as intermediate.

ii. Rearrangement can occur.

2.2 X has lone pair

i. Non Classical Carbocation (NCC or Cyclohalonium ion) obtained as intermediate.

ii. No Rearrangement.

3 Reagent Table

Reagent	E^+	Nu^-	Path
HCl, HBr, HI	H^+	Cl^-, Br^-, I^-	X does not lone pair
DCl	D^+	Cl^-	X does not lone pair
$H^+/H_2O, H_3O^+, \text{dil.}H_2SO_4$	H^+	OH^-	X does not lone pair
ROH/H^+	H^+	OR^-	X does not lone pair
$RCOOH/H^+$	H^+	$RCOO^-$	X does not lone pair
X_2/CCl_4	X^+	X^-	X has lone pair
Br_2/H_2O or $HOBr$	Br^+	Br^-, OH^-	X has lone pair
Br_2/H_2O in Brine	Br^+	Br^-, OH^-, Cl^-	X has lone pair
$NOCl$ (Tilden Reagent)	NO^+	Cl^-	X has lone pair
IN_3	I^+	N_3^-	X has lone pair

4 KCP and TCP

KCP	TCP
Kinetically Controlled Product	Thermodynamically Controlled Product
$1,2-$ Product is assumed to be KCP	Can be $1,2$ and $1,4$
Fast Rate	Stable Product
Favors at low temperature $(-80, -40, 0°C)$	Favors high temperature