

Nucleophilic Substitutions + Eliminations

Substrate	Nucleophile	Leaving Group	Solvent and Temperature
1° → Only SN2, no SN1	Strong → SN2	Bad → No SN1, potential SN2	Polar aprotic → SN2
2° → SN2 or SN1	Moderate → SN2 or SN1	Good → SN2 or SN1	Polar protic → SN1
3° → Only SN1, no SN2	Weak → SN1	Excellent → SN1	High Temperature → E2 or E1 Low Temperature → SN2 or SN1

Eliminations

Substrate	Base	Leaving Group	Solvent and Temperature
1° → E2 only	Strong → E2	Bad → E2	Protic → E1
2° → E2	Moderate → E2	Good → E2 or E1	Polar aprotic → E2
3° → E2 and E1	Weak → E1	Excellent → E1	High Temperature → E2 or E1 Low Temperature → SN2 or SN1

Nucleophilicity

Very good	I^- , HS^- , RS^-
Good	Br^- , HO^- , RO^- , NC^- , N_3^-
Fair	NH_3 , Cl^- , F^- , RCO_2^-
Weak	H_2O , ROH
Very weak	RCO_2H

Leaving Groups

Very good	TsO^- , NH_3
Good	I^- , H_2O
Fair	Br^-
Weak	Cl^-
Very weak	HO^- , NH_2^- , RO^-