

Halide Type	S _N 1	S _N 2	E1	E2
RCH ₂ X (primary)	Does not occur	Highly favored, even with strong unhindered bases. (strong hindered base gives E2)	Does not occur	Favored when strong hindered bases are used
R ₂ CHX (secondary)	Possible for weak base (water, alcohols)	Occurs with polar aprotic solvents Favored with weak bases. (E2 favored with strong bases)	Dehydration of 2° alcohols.	Favored when strong bases used. Consider base sterics for Zaitsev's rule or Hoffmann's rule product.
R ₃ CX (tertiary)	Favored with weak bases (water and alcohols) with no acid catalyst. (Strong bases favor E2)	Does not occur	Dehydration of 3°alcohols. Can occur in competition with S _N 1 (with weak bases, water and alcohols).	Favored when strong bases used. Consider base sterics for Zaitsev's rule or Hoffmann's rule product.

Other consideration:

High temperature favors elimination
Polar aprotic solvents favor S_N2
Strong bases tend to do elimination reactions
(pK_a of conjugate acid 16 or greater)

Low temperature favors substitution
Polar protic solvents favor S_N1
Weak bases tend to do substitution reactions
(pK_a of conjugate acid 10 or less)