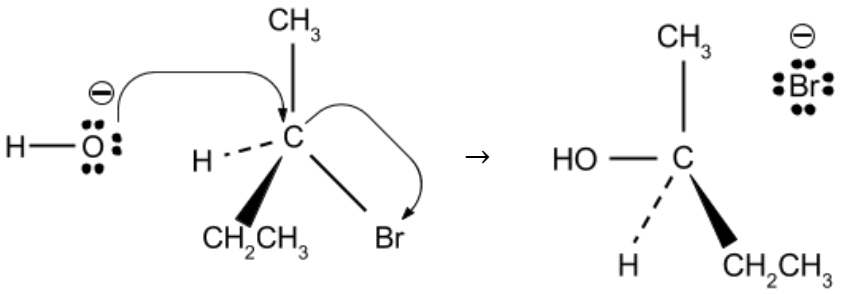
S_N2 Stereo Chemistry

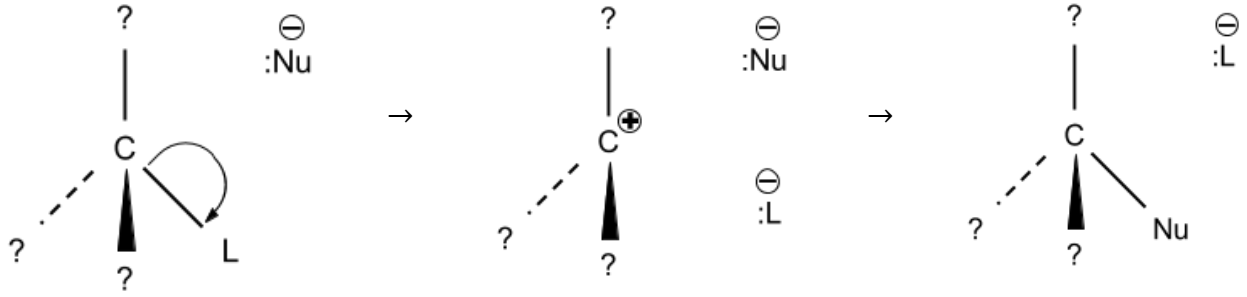


OH
good
nucleophile

Beginning R - 2 - bromo butane Ending S - 2 - butanol

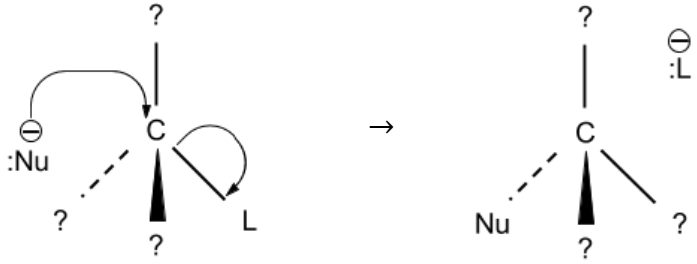
All S_N2 reactions with a chiral C change their handedness between the beginning and ending stages.
R changes to S
S changes to R

S_N1



S_N1 reactions can occur with a tertiary and secondary carbocation
But very unlikely with a primary carbocation

S_N2



S_N2 reactions occur when nucleophile is strong and when carbocation has very low steric hindrance atoms attached to carbocation do not block nucleophile from attacking
Thus S_N2 reactions can occur with a central C such as a methyl or a primary carbocation

Summary of S_N1 and S_N2 basic difference

A weak nucleophile and many C atoms protecting the central C then S_N1, since :Nu cannot attack
A strong nucleophile and few or no C atoms protecting the central C then S_N2, since :Nu can attack