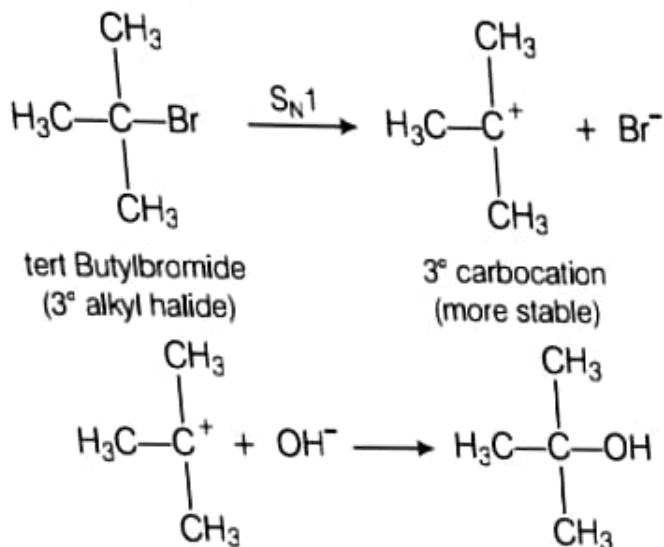


4 **tert-Butylbromide** reacts with aq. NaOH by S_N1 mechanism while **n-butylbromide** reacts by S_N2 mechanism. Why?

Tert. butyl bromide reacts with aq. NaOH as follows



tert. butyl bromide when treated with aq. NaOH, it forms *tert.* carbocation which is more stable intermediate. This intermediate is further attacked by OH^- ion.

As *tert.* carbocation is highly stable so *tert* butylbromide follow S_N1 mechanism.

In case of *n*-butylbromide, primary carbocation is formed which is least stable so, it does not follow S_N1 mechanism. Here, steric hindrance is very less so, it follow S_N2 mechanism. In S_N2 mechanism, OH^- will attack from backside and a transition state is formed.

The leaving group is then pushed off the opposite side and the product is formed.

