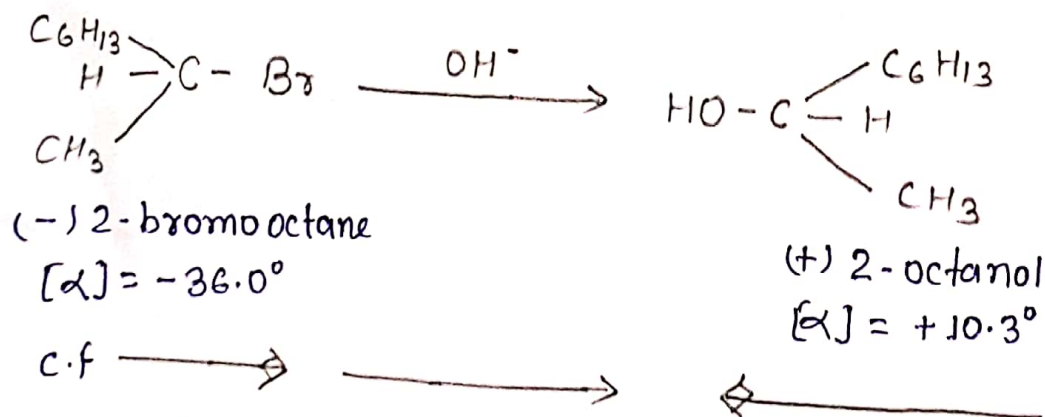


Q Write a note on Walden inversion.

Ans Walden Inversion:

The change involving inversion of Configuration of an optically active Compound is called Walden inversion. It is also called Optical inversion Walden in 1895 observed that when a functional group directly attached to a chiral Carbon atom is replaced by another functional group, The Configuration of the product is changed and usually The Sign of rotation also may be opposite to that of The parent Compound. It is just like an umbrella turning inside out on a particular windy day -



Walden inversion is believed to follow $\text{S}_{\text{N}}2$ mechanism. It is affected by the nature of Compound, reagent, Solvent etc. The inversion may not lead to a change in the direction of rotation. Hence the Change if any is only incidental.

Walden inversion is easily observed if the central C-atom is chiral atom because the optical activity of the parent compound is generally opposite to that of the product. In the inter conversion of d & l malic acids, steps - 1 & 3 involve a change in configuration and are therefore Walden Inversions -

