## Ethyl benzene $(C_6H_5C_2H_5)$ .

It can be prepared by the following reactions,

- (1) By Wurtz-Fittigreaction:  $C_6H_5Br + 2Na + BrC_2H_5 \longrightarrow C_6H_5C_2H_5 + 2NaBr$
- (2) By Friedel-craft's reaction:  $C_6H_5H + BrC_2H_5 \xrightarrow{AlCl_3} C_6H_5C_2H_5 + HBr$
- (3) By catalytic reduction of styrene:  $C_6H_5CH = CH_2 + H_2 \longrightarrow C_6H_5CH_2CH_3$
- (4) By alkyl benzene synthesis:  $C_6H_5H + H_2C = CH_2 \xrightarrow{AlCl_3, HCl} C_6H_5CH_2CH_3$

It undergoes electrophilic substitution reactions in the same way as toluene. When oxidised with dil.  $HNO_3$  or alkaline  $KMnO_4$  or chromic acid it forms benzoic acid.

$$C_6H_5C_2H_5 \xrightarrow{[O]} C_6H_5COOH$$