

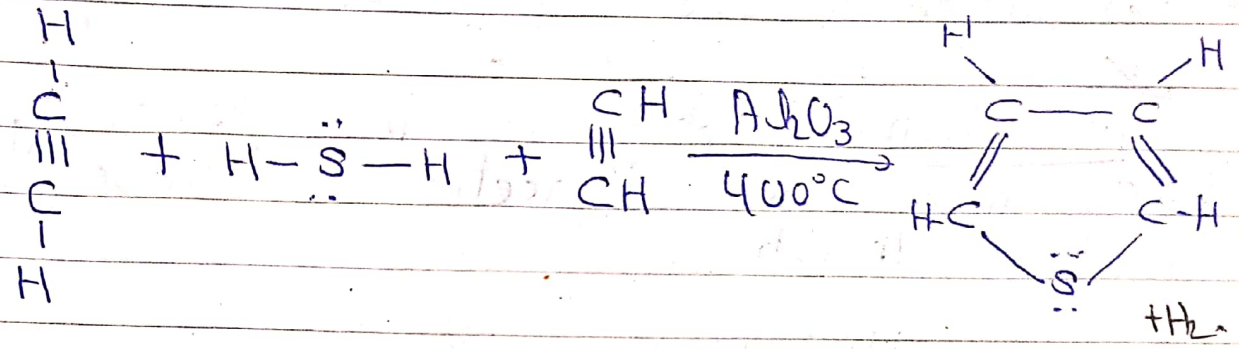
## THIOPHENE $C_4H_4S$

### (1) Isolation From coal tar-

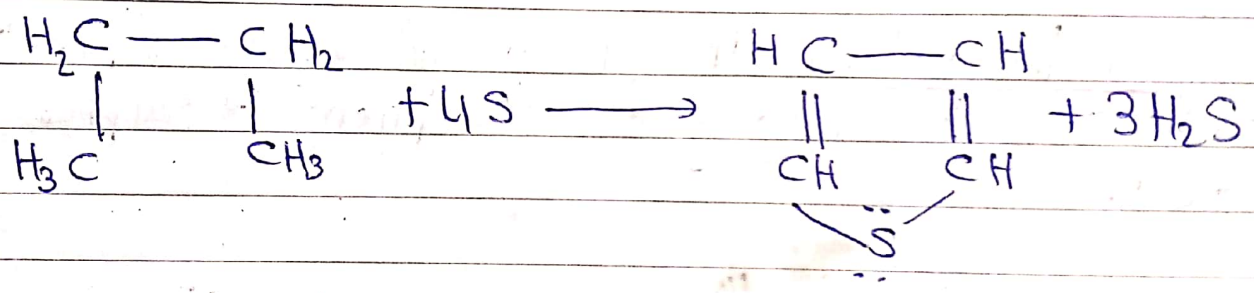
Light oil fraction of coal tar contains benzene along with thiophene. Thiophene is recovered from benzene when light oil is treated with cold concentrated  $H_2SO_4$ . Thiophene sulphuric acid formed is readily soluble in water and is removed on extracting with water. Thiophene is recovered by steam distillation of thiophene sulphuric acid.

Synthetic method -

(a) It is prepared by passing a mixture of acetylene and hydrogen sulphide over heated Alumia and red hot tube.



(b) <sup>also</sup> It is prepared by heating n-butane with sulphur at high temperature.



Properties -

Thiophene is a resonance hybrid of several cononical structures.

