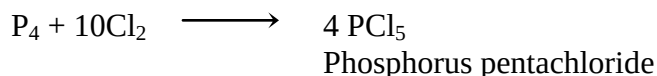
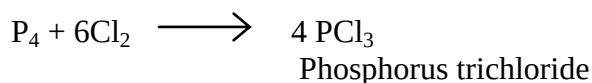
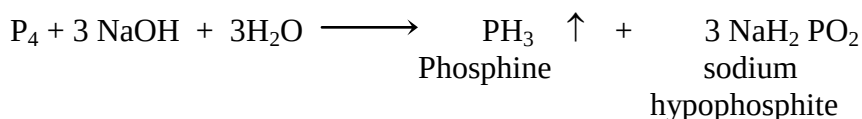


3. **Discuss the action of phosphorus with (i) Chlorine, (ii) Sodium hydroxide, (iii) Concentrated nitric acid.**

**(i) Reaction with chlorine:** White phosphorus spontaneously catches fire in chlorine forming phosphorus trichloride and pentachloride while the red phosphorus catches fire in chlorine only on heating.



**(ii) Reaction with alkalis:** White phosphorus reacts with hot solutions of caustic soda or caustic potash giving phosphine gas.

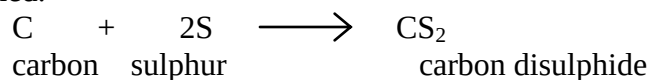


**(iii) Reaction with acids:** When white phosphorus is heated with concentrated nitric acid, it is oxidized to orthophosphoric acid  $\text{H}_3\text{PO}_4$ .

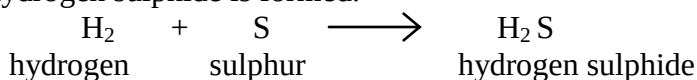


4. **Explain with equations what happens when (i) sulphur is heated with carbon, (ii) hydrogen gas is passed through boiling sulphur, (iii) sulphur is treated with hot concentrated sulphuric acid, (iv) sulphur is heated with concentrated nitric acid.**

**(i) Reaction of sulphur with carbon;** on heating to a high temperature carbondisulphide is formed.



**(ii) When hydrogen gas is passed through boiling sulphur,** a foul smelling gas hydrogen sulphide is formed.



**(iii) Reaction with sulphuric acid:** Hot and concentrated sulphuric acid oxidises sulphur to sulphur dioxide.

