

## **Smog**

It is a mixture of smoke (composed of tiny particles of carbon, ash and oil etc from coal combustion) and fog in suspended droplet form. It is of two types:

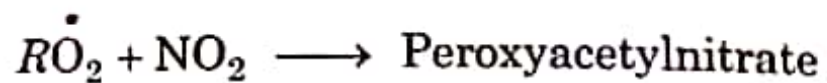
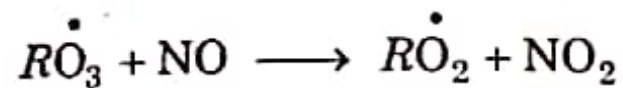
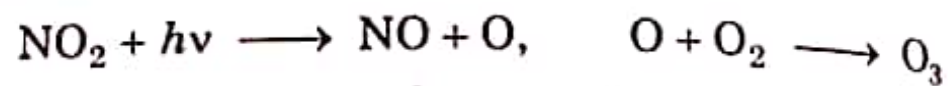
## 1. London Smog or Classical Smog

It is coal smoke plus fog. The fog part is mainly  $\text{SO}_2$  and  $\text{SO}_3$ . Chemically, it is a reducing mixture and so, it is called reducing smog. It causes bronchial irritation and acid rain. It is reducing in nature and occurs in cool humid climate.

## 2. Photochemical Smog or Los Angeles Smog

The oxidised hydrocarbons and ozone in a warm, dry and sunny climate cause photochemical smog. Its brown colour is due to the presence of  $\text{NO}_2$ . It occurs in very large populations and high vehicular density cities.

The nitrogen dioxide by absorbing sunlight in blue and UV region decomposes into nitric oxide and atomic oxygen followed by a series of the other reactions producing  $\text{O}_3$ , formaldehyde, acrolein and peroxyacetylnitrates.



Hydrocarbons +  $\text{O}_2, \text{NO}_2, \text{NO}, \text{O}, \text{O}_3 \longrightarrow$  Peroxides, formaldehyde, peroxyacetylnitrate (PAN), acrolein etc.

It is oxidising in nature and causes irritation to eyes, lungs, nose, asthmatic attack and damage to plants.