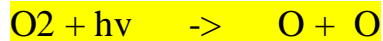


OZONE LAYER DEPLETION

For the last 450 million years the earth had a natural sunscreen in the stratosphere called ozone layer. The layer filters out harmful u.v. radiations from sunlight & thus protects various life forms on the earth. Ozone is a form of oxygen. It has 3 molecules of oxygen (O₃). U.V. radiations less than 242 nanometers decompose molecular oxygen into atomic oxygen by photolytic decomposition.



The atomic oxygen rapidly reacts with molecular oxygen to form ozone.



The amount of atmospheric ozone is measured by DOBSON UNITS (DU). One DU is equivalent to a 0.01 mm thickness of pure ozone layer at the density it would possess if it were brought to ground level pressure.

CAUSES OF THINNING OF OZONE DEPLETION

Above the 17km from earth surface or above the biospheres a thick layer of ozone gas is found in stratosphere. This ozone gas reflects the u.v. radiation of solar system. But some gases like C.F.C which is generally used in refrigerators & other products & N₂O generally used in fuel of supersonic planes mostly CFC is responsible for the death of O₃ molecule in stratosphere. One molecule of CFC breaks thousand molecules of O₃ while one molecule of N₂O breaks some molecules of ozone away. Due to depletion of ozone gas or low concentration of O₃ in environment lack of O₃ will perform direct path of u.v. rays of sun

EFFECT OF OZONE LAYER DEPLETION

- (1). Ozone depletion in stratosphere will result in more u.v. radiations reaching the earth especially. This u.v. radiation can affect DNA & photosynthesis of plants.
- (2). Easy absorption of u.v. rays will affect the cornea of eye.
- (3). Melanin producing cells of the epidermis will get destroyed by u.v. rays.
- (4). Phyto plankton are sensitive to u.v. exposure. Ozone depletion will result in decrease in their population there by affecting the population of zooplankton -> fish or aquatic food chain .
- (5). Yield of vital crop like corn, rice, soya bean, cotton, pea & wheat will decrease.

- (6). Spinach, potato, & other vegetables degradation due to u.v. rays kills the chlorophyll from plants body.
- (7). Economic loss due to u.v. radiation by degradation of paint, plastic & quality of other building material.
- (8). Paints of automobile also degrade due to u.v. radiation.

CONTROLS

- (1). Cut down the uses of CFC.
- (2). Develop alternative sources of cooling.
- (3). Avoid the production of CFC based products like:-
 - (a). Perfumes
 - (b). Fire extinguisher
 - (c). Develop the uses of biofertilizers
 - (d). Decrease the uses of supersonic jet engines

