



It is a way of thinking and utilizing the existing knowledge and principles of chemistry and other science to reduce the adverse impact in environment.

Green chemistry



Gradual increase in average temperature of surface of the earth due to increase in concentration of green house gases ( $\text{CO}_2$ ,  $\text{CFCs}$ ,  $\text{CH}_4$ )

Global warming

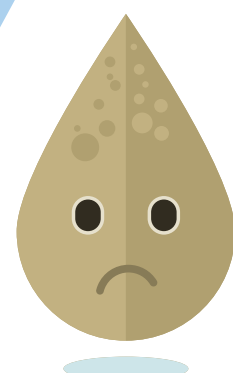


Green House Effect

It is naturally occurring phenomenon responsible for heating earth's surface and atmosphere

Amount of oxygen required by bacteria to break down the organic matter present in a certain volume of a sample of water.

Biochemical oxygen demand (BOD)



Water Pollution

Pathogens

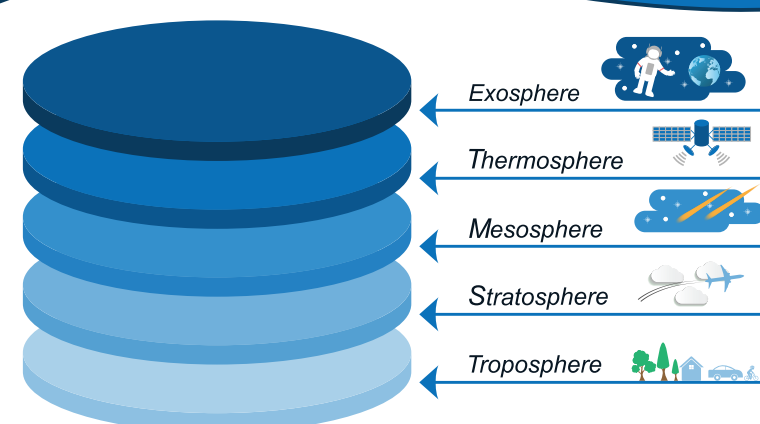
Organic waste chemical pollutants plastic waste.



Layer of Atmosphere

Troposphere : 0-10 km  
Stratosphere : 10-30 km  
Mesosphere : 30-50 km  
Thermosphere : 50-400 km  
Exosphere : 400 km

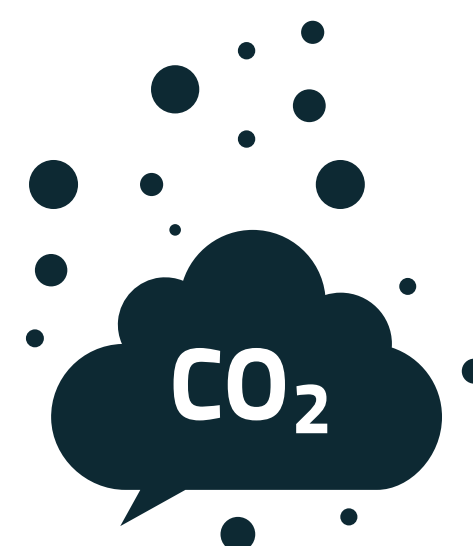
Atmosphere of Earth



## Environmental Chemistry

Atmosphere

Atmospheric pollution



When pH of rain water drops below 5.6

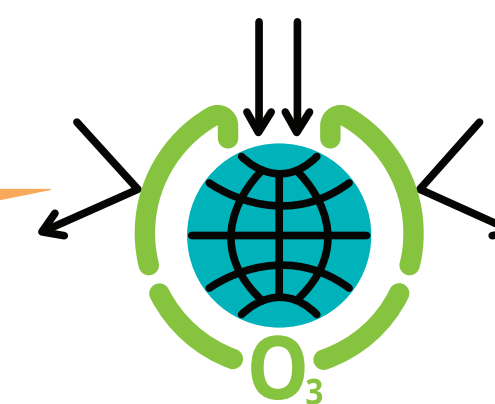
Acid Rain

Oxides of Sulphur  
Oxides of Nitrogen  
Oxides of Carbon  $\rightarrow \text{CO}$ ,  $\text{CO}_2$   
Particulate Pollutants  
Hydrocarbons

Smog  $\rightarrow$  Smoke + Fog

• Classical Smog  
• Photochemical Smog

Depletion of  $\text{O}_3$  Layer



OZONE DEPLETION

Chlorofluorocarbon (CFC's)  
 $\text{CFC} + h\nu$  (high heat) +  $\text{O}_3$   
 $\downarrow$   
Free Cl ion  
 $\text{Free Cl ion} + \text{O}_3 \rightarrow \text{O}_2 + \text{O}$

Types

1. Biodegradable waste:  
Generated by cotton mills, paper mills, textiles, etc.  
2. Non-biodegradable waste:  
Generated by power plants, steel plants, fertilizer industries, etc.

Preventions

• Use of manures.  
• Use of bio-fertilizers.  
• Proper Sewage system.  
• Salvage and recycling.

• Pesticides  
• Herbicides  
• Industrial waste  
• Plastics

Soil Pollution

