



Sadiq Public School

Do the right, fear no man

Subject: Chemistry

Class: S3

Day: Saturday (16-11-2024)

Lesson Atmosphere

A: Inquiry

Write down the significance of the atmospheric gases.

Atmosphere is the envelope of different gases around the earth. The percentage composition of the atmospheric gases. Nitrogen is 78.09%. Oxygen is 20.94%. Argon is 0.93%. Carbon dioxide is 0.03%.

Significance of gases:- The study of composition of atmosphere provides us the knowledge about significance of gases present in the atmosphere. Nitrogen is an inert gas for the fire. It also converted into nitrates for the plants by nitrogen fixing bacteria.

Oxygen is responsible for the life on the Earth. It also help in burning processes. Argon is used in coloured tubelights. Carbon dioxide is responsible for photosynthesis and extinguishing the fire. Carbon dioxide is responsible for the increasing of temperature on the Earth.

B: Information.

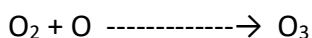
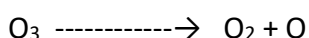
Troposphere:- The region of atmosphere from earth's surface up to 12 km is called troposphere. In this region temperature decreases from 17 to -58 regularly.

Composition of troposphere:- The major constituents of troposphere are nitrogen and oxygen gases. These two gases comprise 99% by volume of the Earth's atmosphere.

Temperature range:- Although concentration of carbon dioxide and water vapours is negligible in atmosphere, yet they play a significant role in maintaining temperature of the atmosphere. Both of these gases allow visible light to pass through but absorb infrared radiations emitted by the Earth's surface. Therefore, these gases absorb much of the outgoing radiations and warm the atmosphere. As the concentration of gases decreases gradually with the increase of altitude, correspondingly temperature also decreases at a rate of 6°C per kilometer. This is the region where all weathers occur. The major mass of the atmosphere is laying in this region.

Characteristics of stratosphereThe third layer of atmosphere, stratosphere is 50 km above the Earth has the following characteristics.

- i).Ozone layer is present this region.
- ii).Ozone layer in this region absorbs the ultraviolet radiations.
- iii).The temperature increases in this region from -58°C to 2°C.
- iv).The formation and decomposition of O₃ takes place in this region.



The temperature in stratosphere is rises from -58°C to 2°C. The presence of ozone layer in this region is responsible for the rise of temperature as the the altitude is increases. Since ozone layer in this layer absorbs high energy ultraviolet radiations from the Sun. Due to this absorbtion of radiations the temperature is increases upwards in this sphere.

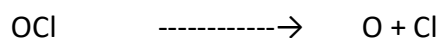
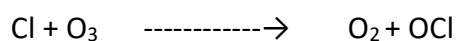
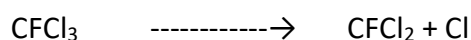
C: Synthesizing/absorbing the information

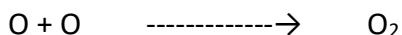
Where does ozone layer lie in atmosphere? How it is depleting and how we can prevent its depletion?

The allotropic form of oxygen O₃ is consisting of three atoms which surrounds the global Earth like a shield from harmful ultraviolet radiations of Sunlight. It is formed in stratosphere by combining of an atomic oxygen and oxygen molecule in the hight 25-30 km away from the Earth. $\text{O}_2 + \text{O} \text{ -----} \rightarrow \text{O}_3$

Reasons of depleting of ozone layer:-

- i).Ozone layer absorbs solar radiations and dissociate readily.
- ii).CFC's are major cause of depletion of ozone layer.





Ozone layer prevention from its depletion:-Major cause of depleting ozone layer is chlorofluorocarbons (CFCs) which are produced by air conditioners, aerosol sprays and refrigerators. The uses of these things should be control to reduce the formation of CFCs.

D. Practicising

1. Effects of ozone depletion are following except the one:

- a) increases infectious diseases
- b) increases crops production
- c) can cause skin cancer
- d) can cause climatic changes

2. Which one of these pollutants are not found in car exhaust fumes?

- a) CO
- b) O₃
- c) NO₂
- d) SO₂

3. The process by which atmospheric nitrogen is turned into nitrates in the soil is called:

- a) nitration
- b) fixing
- c) oxidation
- d) eduction

4. Global warming is because of:

- a) absorpction of infrared radiations emitted by the Earth’s surface
- b) absorpction of infrared radiations coming from the Sun
- c) absorpction of ultravoilet radiations coming from the Sun
- d) emission of ultravoilet radiations from the Earth’s surface

5. Carbon monoxide is harmful to us because:

- a) it paralyses the lungs
- b) it demages the lungs tissues
- c) it reduces oxygen carrying ability of haemoglobin
- d) it makes the blood coagulate

1.What threats are to human health due to SO₂ gas as air pollutant?

2. Define acid rain. How it form and what are its effects?

3. How ozone layer forms in stratosphere?

4. How ozone layer is being depleted by chlorofluorocarbons?

5.Give characteristics of stratosphere/

Feedback:

- Send an email on my official email address provided below to let me know that you are receiving the lessons and to show your participation. There is no need to send the photos of daily home work. You are required to complete your Homework on daily basis.
- **If you have any questions about** the Atmosphere and its components write these in your email please send me an email and I will reply asap

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