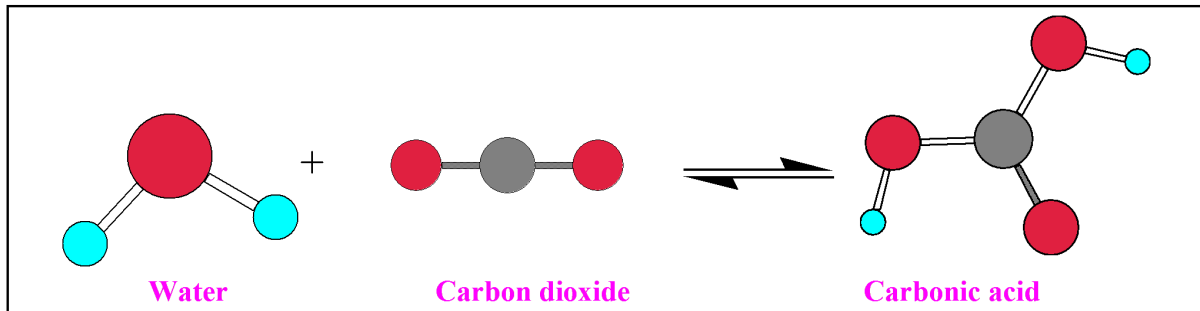


ACID RAIN

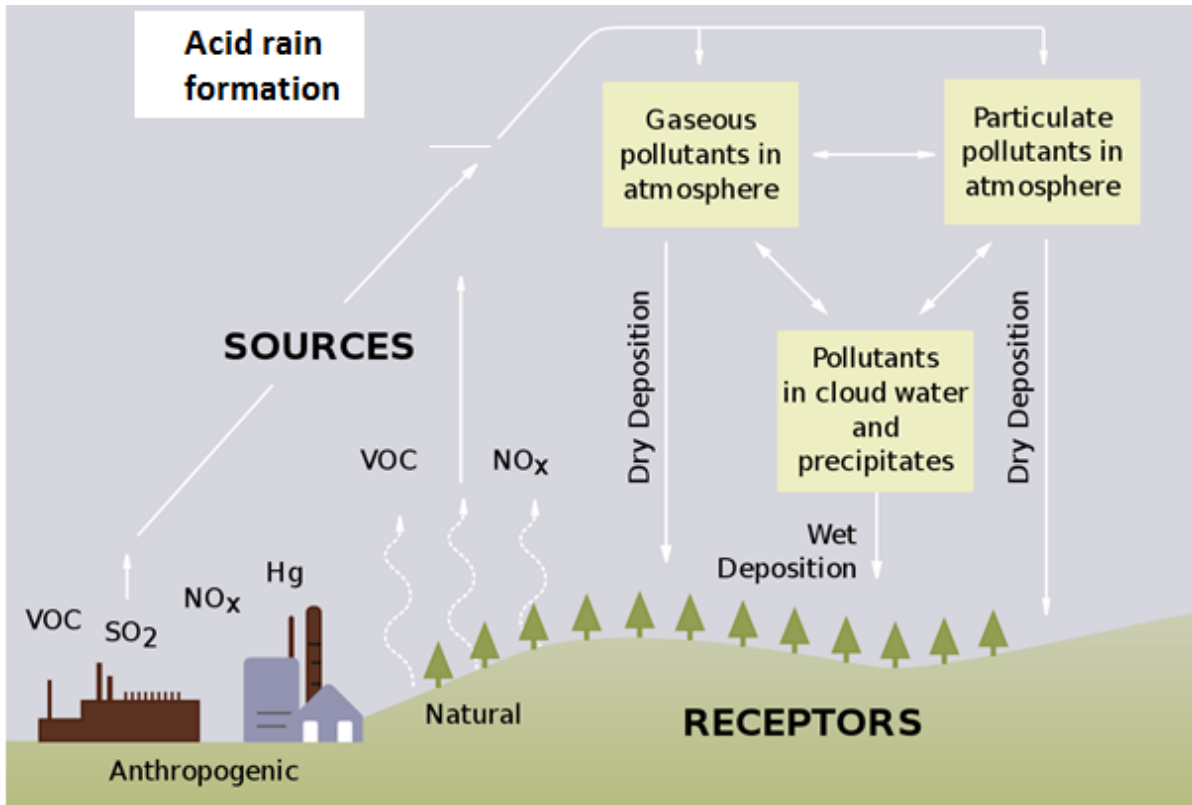
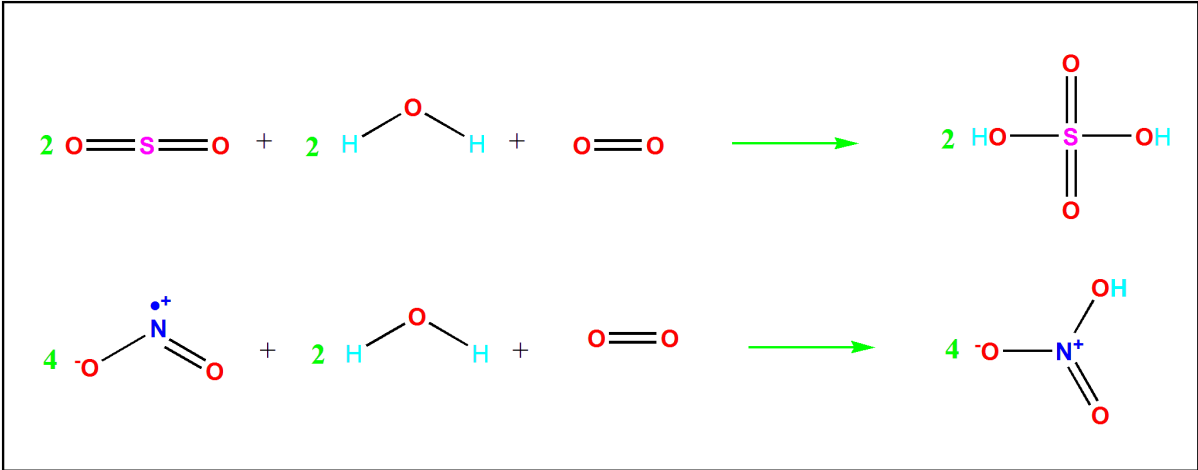
Due to the presence of carbon dioxide in air the unpolluted rain water is slightly acidic. Carbon dioxide react with water droplets which formed weak carbonic acid with pH about 5.6.



The falling rain react with oxides of sulphur and nitrogen to form a mixture of sulphuric acid, nitric acid and water. This process is known as acid rain. The pH of rain water less than 5.7 is called acidic rain. In some areas pH has been recorded less than 2.5 due to due to industries and large number of motor vehicles. Acid rain is also called acid deposition because it may be exhibited in more physical state than rain alone. Acid deposition is two type:

- (i) **Wet deposition:** when rain, sleet or fog more acidic than normal
- (ii) **Dry deposition:** deposition of gases and dust particles

The burning of coal and oil by power plants and other industries release sulphur dioxide into air due to the presence of small amount of sulphur in coal and oil. Sulphur dioxide(SO₂) and nitrogen dioxide(NO₂) combine with water vapour and oxygen in the atmosphere the formation of sulphuric acid and nitric acid will take place. The reaction is given below:

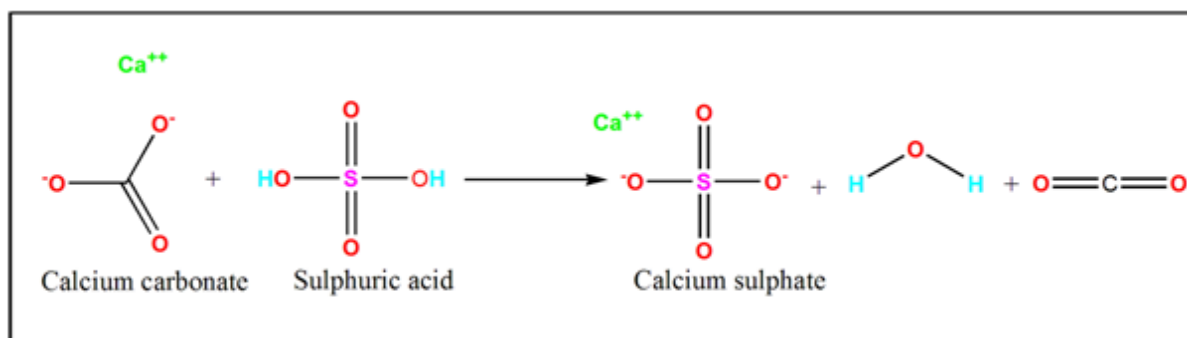


<https://images.app.goo.gl/FSyXoJQXutYBJby1A>

Effects of Acid Rain: Acid rain effect the environment in several different ways. Some of the harmful effects are given below:

- (i) The acidity of water in lakes and streams increased due to acid rain which is harmful to fish life.

- (ii) Human life effected by acid deposition which release toxic metals like mercury and aluminium. High amount of acid deposition show increased frequencies of allergies, breathing problem, coughs etc.
- (iii) Excessive acid concentration are toxic to plant. Acid rain does not only kill trees directly it also damage their leaves, prevent the seed germination and leaching the nutrients.
- (iv) The buildings and statures which are made of limestone or marble are damaged due to acid rain. The chemical reaction is like:



EXAMPLES OF ACID RAIN

Taj Mahal: Acid rain react with marble and deposition of calcium sulphate is take place which change the colour of Taj Mahal.



<https://images.app.goo.gl/qD3ctUfnHpPUmL5z5>

Before and After effects of acid rain on the Taj Mahal

Sculpture of Liberty: It is made of copper has been harmed by the combined activity of acid rain and oxidation and the colour of getting green in shading.



<https://images.app.goo.gl/3S8AgVVwKQdCc9wT8>

Before and After images of the impact of Acid Rain on the Statue Of Liberty

References

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- Senior Secondary Course Chemistry (2) 313, National Institute of Open Schooling
- www.wikipedia.com