



# SNS COLLEGE OF TECHNOLOGY

(An Autonomous Institution)



## Desalination

The removal of dissolve solids (NaCl) from water is known as desalination process.

It can be carried out by (1) Reverse osmosis and (2) electro dialysis.

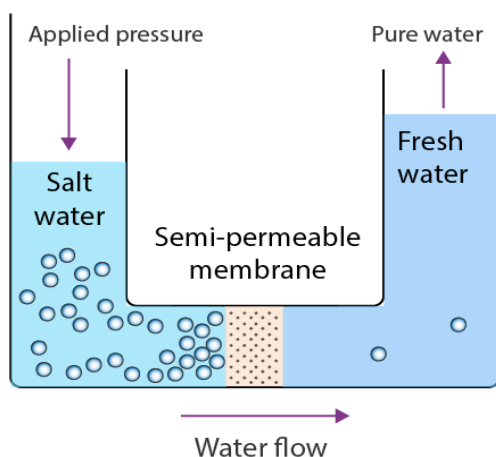
### Reverse osmosis. (R.O)

Reverse osmosis is one of the membrane filtration processes.

The process is used to remove salts and organic micro pollutants from water.

**Principle: Osmosis:** When two solutions of different concentrations are separated by a semi permeable membrane, solvent flows from low concentration side to high concentration side. This is called Osmosis. The Pressure developed on the membrane is called osmotic pressure.

If the pressure higher than osmotic pressure is applied on the higher concentrated side, then the solvent flows in reverse direction i.e from higher concentrated side to lower concentrated side. This is called Reverse osmosis.



This method is applicable mainly for the desalination of sea water. Sea water and pure water are separated by a semi-permeable membrane made up of cellulose acetate fitted on both sides of a perforated tube.

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### Advantages

1. This process removes ionic as well as non-ionic, colloidal and high molecular weight organic matter.
3. The life time of membrane is quite high, about 2 years.
4. The membrane can be replaced within a few minutes.
5. Due to low cost, simplicity and high reliability, the reverse osmosis is used for converting sea water into drinking water.



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