

Bulletin



Monthly Newsletter



MAHARASHTRA POLLUTION CONTROL BOARD

OCTOBER 2021



Editorial

We are gladdened to present to the stakeholders MPCB's 7th edition of E-bulletin as we continue to series. This E-bulletin is an attempt to give you a brief insight into the latest happenings in the field in terms of various new initiatives undertaken, awareness programs being carried out by MPCB and introduce the reader to the breakthrough research which is being done in this field.

In this edition of the E-Bulletin, we are highlighting initiatives taken by MPCB to celebrate "The International Day of Clean Air for Blue Skies' 2021 Day" on 07th September and the world Ozone Day' 2021 on 16th September as well as information regarding water purification technology details. It also includes brief of important notification that has published recently.

We hope this E bulletin is very much valuable, informative and helpful for the readers and we will also greet your suggestion & feedback for betterment of our future E-bulletins.

NEW INITIATIVES

The International Day of Clean Air for Blue Skies

Maharashtra Pollution Control Board (MPCB) in association with IIT Delhi Alumni Association (IITDAA) arranged a Webinar on the "Occasion of The International Day of Clean Air for Blue Skies 2021 & MPCB's Foundation Day" on 07th September, 2021 celebrated the day. The speakers stressed for achieving the National Clean Air Program (NCAP) objectives.

Organised by Maharashtra Pollution Control Board (MPCB)
In association with
IIT Delhi Alumni Association (IITDAA)
THE INTERNATIONAL DAY OF
Clean Air for Blue Skies 2021 - 7th September 2021, From
MPCB'S FOUNDATION DAY

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The day aims to raise public awareness - clean air is important for health, productivity, the economy, and the environment.

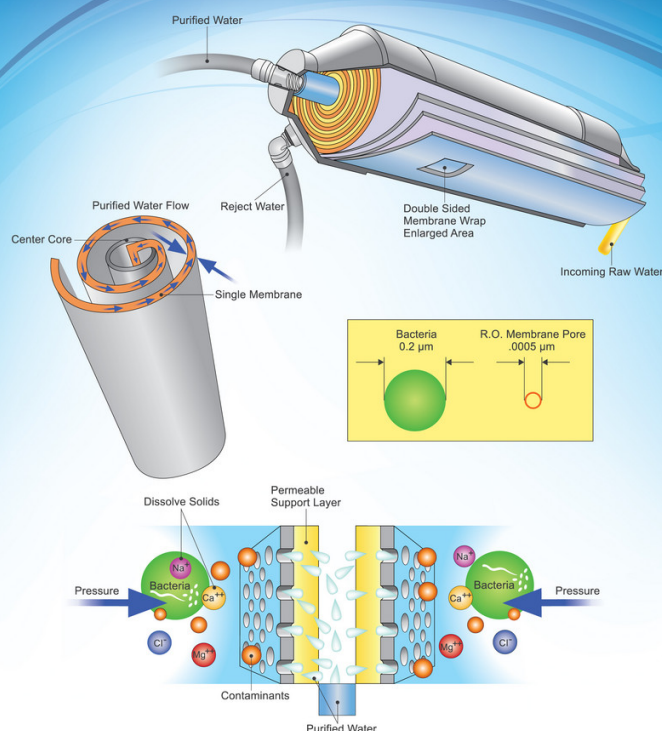
Encouraged by the increasing interest of the international community in clean air, and emphasizing the need to make further efforts to improve air quality, including reducing air pollution, to protect human health, the General Assembly decided to designate 7 September as the International Day of Clean Air for blue skies.

TECHNOLOGY

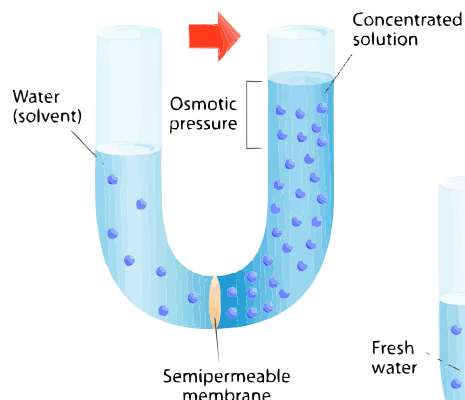
Reverse osmosis

Reverse Osmosis (RO) is a water purification process that uses a partially permeable membrane to separate ions, unwanted molecules and larger particles from drinking water. In reverse osmosis, an applied pressure is used to overcome osmotic pressure, a colligative property that is driven by chemical potential differences of the solvent, a thermodynamic parameter. Reverse osmosis can remove many types of dissolved and suspended chemical species as well as biological ones (principally bacteria) from water, and is used in both industrial processes and the production of potable water. The result is that the solute is retained on the pressurized side of the membrane and the pure solvent is allowed to pass to the other side. To be "selective", this membrane should not allow large molecules or ions through the pores (holes), but should allow smaller components of the solution (such as solvent molecules, e.g., water, H₂O) to pass freely.

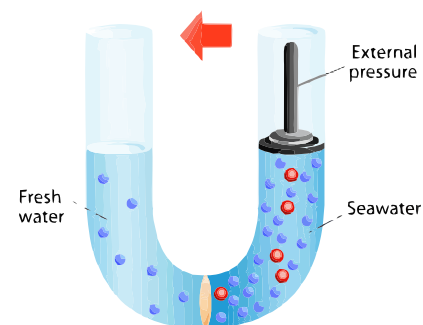
Reverse Osmosis Membrane Pore



Osmosis



Reverse osmosis



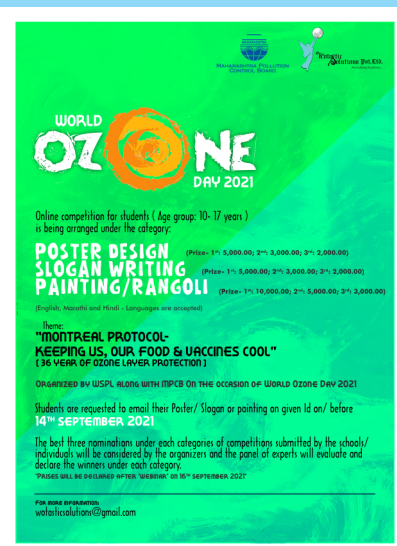
In the normal osmosis process, the solvent naturally moves from an area of low solute concentration (high water potential), through a membrane, to an area of high solute concentration (low water potential). The driving force for the movement of the solvent is the reduction in the Gibbs free energy of the system when the difference in solvent concentration on either side of a membrane is reduced, generating osmotic pressure due to the solvent moving into the more concentrated solution. Applying an external pressure to reverse the natural flow of pure solvent, thus, is reverse osmosis. The process is similar to other membrane technology applications.

Reverse osmosis differs from filtration in that the mechanism of fluid flow is by osmosis across a membrane. The predominant removal mechanism in membrane filtration is straining, or size exclusion, where the pores are 0.01 micrometers or larger, so the process can theoretically achieve perfect efficiency regardless of parameters such as the solution's pressure and concentration. Reverse osmosis instead involves solvent diffusion across a membrane that is either nonporous or uses nanofiltration with pores 0.001 micrometers in size. The predominant removal mechanism is from differences in solubility or diffusivity, and the process is dependent on pressure, solute concentration, and other conditions.

Reverse osmosis is most commonly known for its use in drinking water purification from seawater, removing the salt and other effluent materials from the water molecules.



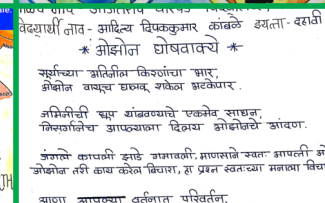
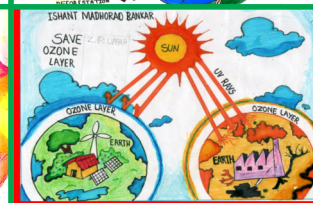
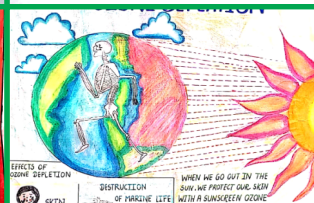
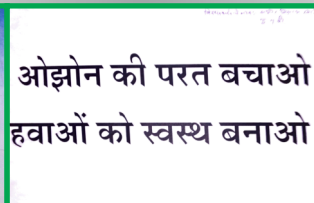
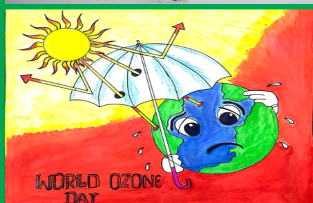
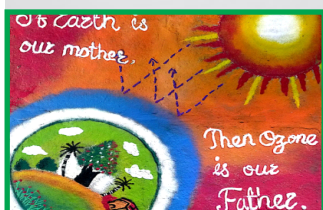
WORLD OZONE DAY



World Ozone Day is observed on September 16, every year. It is celebrated to spread awareness among people about the depletion of the Ozone Layer and search for possible solutions to preserve it. But the energy emanating from the sun would be too much for life on Earth to thrive were it not for the ozone layer. The ozone layer, a fragile shield of gas, protects the Earth from the harmful portion of the rays of the sun, thus helping preserve life on the planet.

The phaseout of controlled uses of ozone depleting substances and the related reductions have not only helped protect the ozone layer for this and future generations, but have also contributed significantly to global efforts to address climate change; furthermore, it has protected human health and ecosystems by limiting the harmful ultraviolet radiation from reaching the Earth.

WSPL in association with MPCB organised an online competition on the occasion of World Ozone Day. A poster design, Slogan writing and Painting/Rangoli competition was held with the theme 'Montreal Protocol - Keeping us, Our food & vaccines cool'. The event was successful and got a huge response in terms of creative entries from all over the state..



NOTIFICATION



THANE CREEK FLAMINGO SANCTUARY – RESTRICTED ZONE OF 3.89KMS

The eco-sensitive zone (ESZ) around Thane Creek Flamingo Sanctuary (TCFS) has been formally reduced from the deemed 10km to 0km at some places to a maximum of 3.9km at others.

The Centre recently issued a gazette defining the ESZ boundary as also the area around the sanctuary which will now be 48 square km.

The ESZ will extend to the limit of mangroves on the western side of the sanctuary and the entire width of Thane Creek and adjoining Navi Mumbai mangrove area on the east.

On the southern side, the boundary borders Sion-Panvel Highway and further south is the commercial part of Thane Creek "which does not add any value to the sanctuary," states the gazette issued on October 14. On the northern side, the ESZ is limited to 2.2km and includes the northern part of the Thane Creek and mangrove patches on government land.



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