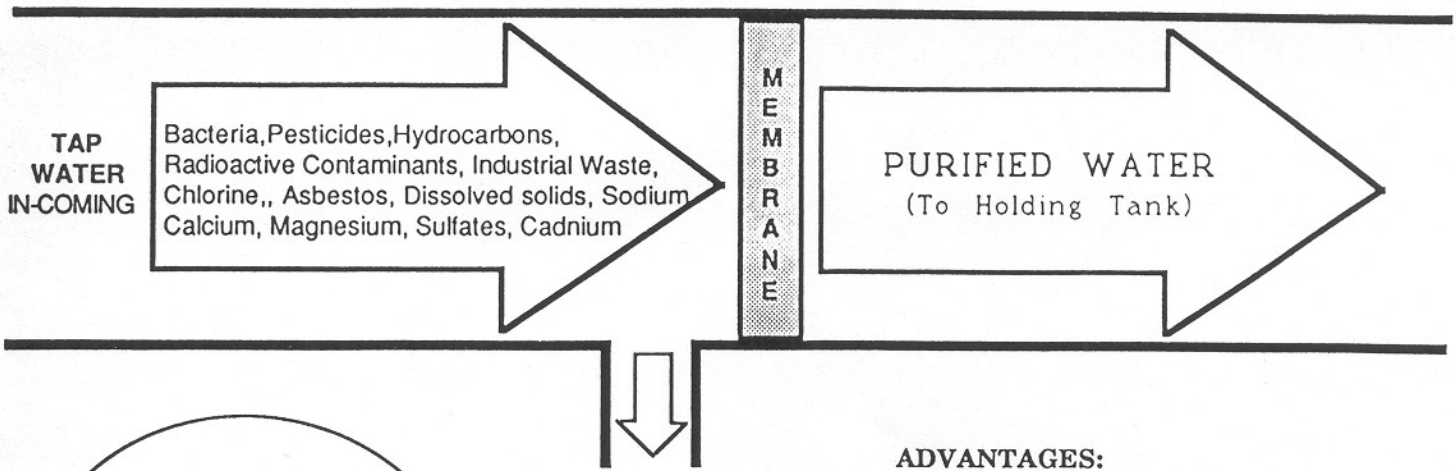
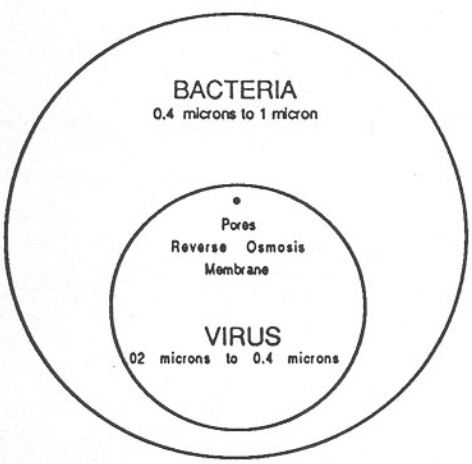
REVERSE OSMOSIS





COMPARATIVE SIZES OF MATERIALS REJECTED BY A REVERSE OSMOSIS MEMBRANE

IMPURITIES
(Out To Drain)

ADVANTAGES:

* Removes taste, odor and color.
* Highly effective purification process. Will remove the pollutants listed above and more!
* Consumes no energy
* Very convenient
* Flushes away pollutants. Does not collect them.
* Low production cost. Guaranteed quality for less than a penny per gallon.

DISADVANTAGES:

* Must have water pressure of at least 10 p.s.i.
* Cannot be used with hot water

What is Reverse Osmosis (R.O.)?

Reverse Osmosis is the best home water purification process available. Developed through the U.S. Department of the Interior, R.O. membranes were first made in the early 50's for the desalination of salt water.

The process of R.O. has eliminated many of the disadvantages found in earlier water purification methods like filters, activated carbon, distillers, flocculation and deionization. None of these methods can produce water as free from pollutants and contaminants as can Reverse Osmosis.

Reverse Osmosis is the process by which water is forced by water pressure through a semi-permeable membrane - a material with microscopically small pores in it. Purified water passes through the membrane while viruses, bacteria, compounds, carcinogens, up to 95% of dissolved solids, pesticides, detergents, etc. are left behind and flushed down the drain.

Osmosis is a natural process in which a fluid passes through a membrane from a higher to a lower concentration. For example, a prune will dry in the sun as the moisture passes through the skin from its moist interior to the drier atmosphere outside. Placing the dried prune in a pan of hot water causes water to pass, again by osmosis, into the sugar solution of the prune, swelling it. The concentration difference acts like a pressure difference to cause a flow through the prune membrane. For example, a 1% salt (NaCl) solution in water separated from pure water by a membrane is equivalent to 100 psi (689 kilopascals) mechanical pressure in causing a flow through the membrane toward the saline solution.

Pressure can be used, in addition to the concentration difference, to cause a flow through the membrane. When pressure causes a flow opposite to the natural osmotic flow, the process is called reverse osmosis. Thus, by squeezing the swelled prune, we can force the moisture back out of the prune even though the natural direction of osmotic flow is intoo the prune. Squeezing concentrates the sugars within the prune by separating the water from them. While the osmotic process causes dillution, reverse osmosis uses pressure to separate and concentrate.

Particle Sizes