

Membrane Filter

Source
ProtectionSafe
Transportation

Sedimentation

Filtration

Disinfection

Safe Storage

What is it?

A membrane is a thin barrier with tiny pores that allow water and certain small particles to pass through but are too small for larger particles to pass through. Membrane filters are classified according to the diameter of the pores in the membrane. Ultrafiltration membranes can remove large particles, bacteria, protozoa, helminths, and some viruses. Microfiltration membranes have bigger pores and cannot remove as many bacteria or viruses. Nanofiltration and reverse osmosis membranes have the smallest pores, allowing them to remove not only pathogens but also many types of chemicals. Some membrane filters include built-in safe storage in the bottom container.

Performance

Microbiological Effectiveness:

Parameter	Effectiveness
Bacteria	Very Effective*
Viruses	Varies
Protozoa	Very Effective*
Helminths	Very Effective*

*Generalization based on pathogen size. Specific membranes vary.

Other Parameters

Depending on pore size, some membrane filters can remove salts, pesticides, and other chemicals.

Source Water Requirements

Varies. High turbidity may cause filters to clog and require more frequent backwashing.

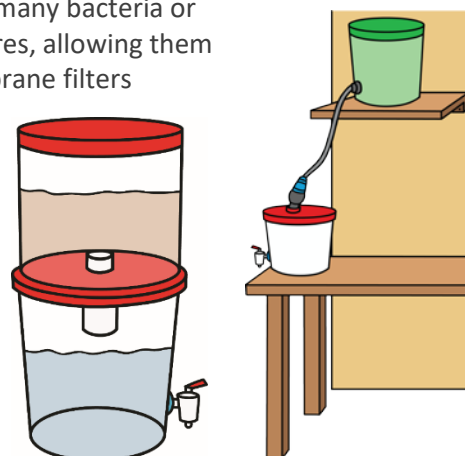
Lifespan

Manufacturer-stated lifespans range from several months to several years. Actual lifespan varies, depending on source water, frequency of use, and maintenance.

Ease of Use & Acceptability

Operation & Maintenance

Many types of membrane filters exist, each with different operation and maintenance requirements. Generally, the user pours water into the filter. Water moves through the membrane by gravity or by the user pumping to increase pressure. Backwashing (pushing water backwards through the filter to clean the pores) is required when flow rate slows. Some filters have built-in safe storage. Others must be attached to, or emptied into, a safe storage container.



Repair & Replacement

Varies. Often requires spare parts or replacement of membrane filter cartridge over time.

User Considerations & Preferences

Varies. See the fact sheets for specific membrane filter types.

Feasibility

Availability

Varies between types of filters and locations. Most are imported, but some membrane filters can be produced locally.

Cost

Varies. See fact sheets for specific filter types.

Size & Weight

Membrane cartridges tend to be small. The filters vary in size, depending on container volume and setup.

More Information

Details and references: www.hwts.info/products-technologies/69e8bea1/membrane-filter

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