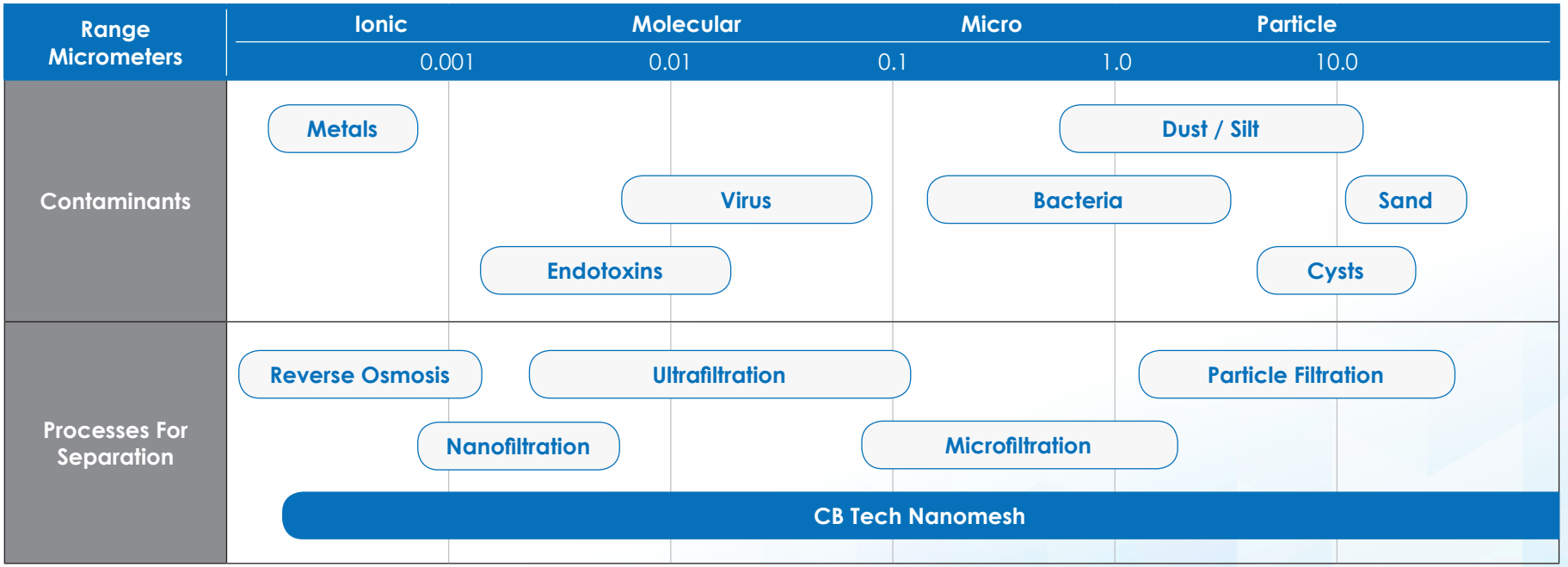
Nanomesh Comparison Guide

Nanomesh technology fundamentally improves the effectiveness of Point of Use (POU) water filtration. When compared to alternative water filtration technologies, the advantages of Nanomesh become readily apparent.

Carbon Block Technology (CB Tech) Nanomesh is an evolutionary leap forward in the advancement of POU water filtration systems.

Point of Use (POU) Water Treatment refers to a variety of different water treatment methods used to improve water quality for an intended use (e.g., drinking, cooking, etc.) at the point of consumption; it is the opposite usage case as Point of Entry (POE) systems which improve water quality where the water supply initially enters a building or at a centralized distribution point.

Filtration Spectrum



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CB Tech Nanomesh™ Technology	Ultrafiltration (UF) Technology	Reverse Osmosis (RO) Technology	Ultraviolet (UV) Purification Technology	Conventional Filtration + Chlorine Technology	Distillation Process
Next-generation water treatment centered on carbon-based filtration technology. It utilizes the advanced properties of CB Tech's proprietary Nanomesh™ to provide both size exclusion and advanced adsorption-based filtration.	A microporous membrane in spiral wound or hollow fiber formats, with pores ranging in size from 0.001 to 0.1 microns, treating contaminants through size exclusion.	A microporous membrane in spiral wound cartridge formats, with pores typically 0.001 microns or smaller. Utilizes size exclusion filtration process that operates in cross flow mode.	Disinfection via ultraviolet light radiation.	A combination of conventional filtration – MF, UF, or RO – with disinfection using oxidation with chlorine.	One of the oldest forms of filtration, in which water is vaporized and then condensed back into a liquid. In the process of vaporization, most of the contaminants are left behind from the water vapor.
ADVANTAGES					
• Assured capture and inactivation of bacteria, viruses, and cysts. • Removal of organics, as well as many chemicals and heavy metals. • No microbial contaminant growth in the media. • Easy to operate and change filter cartridges. • High capacity and long life. • High flow rate with low pressure drop. • Validated by NSF International. • No water wasted. • No power requirements (if proper supply pressure is met).	• Removal of contaminants larger than pore size, potentially including bacteria and cysts. • Extended life through backflushing. • High flow rate with low pressure drop when the pore size is large.	• Removal of all contaminants larger than pore size, including bacteria, viruses, and cysts. • Can extend life through the use of a cleaning solution.	• UV can disrupt bacteria, viruses, and cysts by radiation. • With adequate power, disinfection can occur relatively quickly.	• Chlorine can disrupt bacteria and viruses by oxidation. • Conventional filtration can remove contaminants by size exclusion. • Combined with RO, a small pore size UF system can provide clean and microbial-free water.	• Very pure water is generated through the distillation process. • Metals and salts are not vaporized and thus removed from the distilled water. • Able to provide clean and microbial-free water. • Can desalinate water.
DISADVANTAGES					
• A newer and less-known filtration option.	• Does not remove all microbial contaminants. • Microbial contaminant growth in the media requires disinfection. • Backflushing can be a complicated multi-step process. • Backflushing may create defects in the media and negatively affect filtration performance. • Small pore size or overloaded membrane may cause low flow rate and high pressure drop. • Wastes water during backflushing operation.	• High complexity and difficult to use. • Produces a considerable amount of wastewater. • Microbial contaminant growth in the media requires disinfection. • Low flow rate. • Requires significant energy (inflow pressure) due to high pressure drop of filtration membrane. • Removes healthy minerals from the water. • Membrane cleaning requires chemicals; complicated process may damage the membrane if done improperly. • Susceptible to chlorine fouling.	• High complexity and difficult to use. • Requires power to operate the UV system. • Requires clear water and a clean glass tube to maintain the disruptive efficiency of the UV system. • Low flow rates needed to properly disinfect bacteria, viruses, and cysts. • Not effective at removing metal contaminants.	• High complexity and difficult to use. • Requires waiting time for the chlorine to take effect. • Requires an appropriate concentration of chlorine to disrupt microbial contaminants. • Chlorine is not effective against all microbial contaminants. • Chlorine can create harmful disinfection byproducts. • Chlorine can negatively affect the taste of the water. • Requires high performance of conventional filtration system to ensure UV system efficiency. • Low flow rate and high pressure drop. • Produces a considerable amount of wastewater when combined with an RO system.	• High complexity and difficult to use. • Requires waiting time and power to operate and heat the distillation system.Can carry light volatile organic compounds (VOCs) into the resulting distilled water. • Low flow rate. • Requires a high amount of power to operate.

NOTE: While many of these technologies can be used in conjunction to augment their capabilities, they would subsequently compound their relevant disadvantages. For example, using an RO system in conjunction with a UV system and a chlorine system may offer additional microbial treatment, but will increase the system complexity and be subject to the low flow rate and wastewater of the RO system, the power requirements of the UV system, and the efficacy wait times of the chlorine system.