

Color Removal & THM Reduction

Membrane technology has become more widely accepted in seawater and brackish water treatment applications due to more stringent water quality standards, a decrease in adequate water resources and an emphasis on water reuse. New water quality requirements have challenged membrane manufacturers to develop special products for selective removal of hardness, natural organic matter, trihalomethanes (THMs) color and many other contaminants. Beverage producers in particular, must remove color and THMs from their beverage make-up water to meet FDA requirements.

Color often exists in surface and ground water sources which contain high levels of organic material influenced by decomposing vegetative materials. Many process and water purification applications require color removal before the water can be used further in the process or before it is discharged into a river stream.

Trihalomethanes (THMs) are a group of four chemicals that are formed along with other disinfection byproducts (DBPs) when chlorine or other disinfectants used to control microbial contaminants react with natural organic matter (NOM) and inorganic matter in water. The four THMs include chloroform, bromodichloromethane, dibromochloromethane and bromoform and have been known to cause cancer and other toxic effects to human beings. The United States Environmental Protection Agency (EPA) has published the Stage 1 Disinfectants and Disinfection Byproducts Rule to regulate total trihalomethanes (TTHM) at a maximum allowable annual average level of 80 ppb (or 80 µg/L).

Nanofiltration membranes, specifically TRISEP® TS80 elements, have proven to successfully remove color as well as harmful THM precursors from water while also removing hardness, alkalinity, sulfates, bacteria, organics and other impurities.

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