MEMBRANE ELEMENT ION REJECTION RATES

TFC MEMBRANES

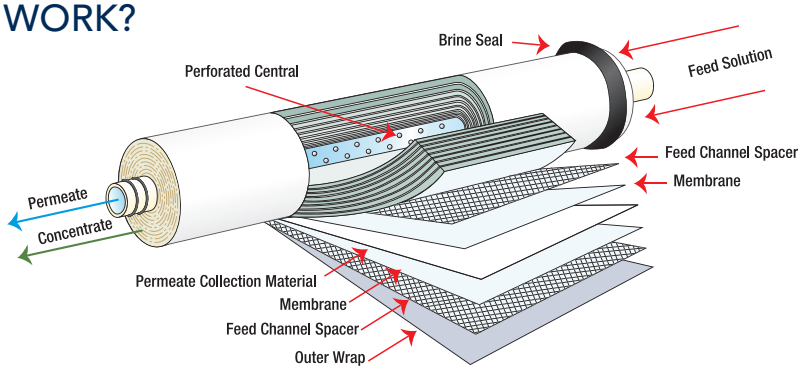
CHARACTERISTICS OF THIN FILM COMPOSITE POLYAMIDE MEMBRANE		
Ion	Symbol	Nominal Rejection %[A]
Aluminum	Al^{+3}	97-98
Ammonium	NH_4^+	85-95
Borate	$B_4O_2^{-2}$	30-50
Boron	B	60-70
Bromide	Br -	93-96
Cadmium	Cd^{+2}	93-97
Calcium	Ca^{+2}	95-98
Chloride	Cl -	92-98
Chromate	CrO_4^{-2}	85-95
Copper	Cu^{+2}	96-98
Fluoride	F -	93-95
Iron	Fe^{+2}	96-98
Lead	Pb^{+2}	95-98
Manganese	Mn^{+2}	97-98
Magnesium	Mg^{+2}	95-98
Mercury	Hg^{+2}	95-97
Nickel	Ni^{+2}	97-98
Nitrate	NO_{3-}	90-95
Phosphate	PO_4^{-3}	95-98
Polyphosphate	No Symbol	96-98
Potassium	K^+	92-96
Silica	Si	85-90
Silicate	SiO_2^{-2}	92-95
Silver	Ag^+	95-97
Sodium	Na^+	92-98
Sulfate	SO_4^{-2}	96-98
Thiosulfate	$S_2O_3^{-2}$	97-98
Zinc	Zn^{+2}	97-99

CTA MEMBRANES

CHARACTERISTICS OF CELLULOSE ACETATE MEMBRANE		
Ion	Symbol	Nominal Rejection %[A]
Aluminum	Al+3	96-99
Ammonium	NH_4^+	85-95
Barium	Ba^{+2}	94-96
Bicarbonate	HCO_3	90-95
Borate	$B_4O_2^{-2}$	25-50
Bromide	Br -	87-93
Cadmium	Cd^{+2}	96-98
Calcium	Ca^{+2}	92-95
Chloride	Cl -	90-95
Chromate	CrO_4^{-2}	80-90
Chromium	Cr^{+3}	96-98
Copper	Cu^{+2}	98-99
Fluoride	F -	87-93
Iron	Fe^{+2}	95-98
Lead	Pb^{+2}	96-98
Manganese	Mn^{+2}	92-96
Magnesium	Mg^{+2}	96-98
Mercury	Hg^{+2}	96-98
Nickel	Ni^{+2}	96-98
Nitrate	NO_{3-}	50-70
Phosphate	PO_4^{-3}	96-99
Potassium	K^+	85-95
Silicate	SiO_2^{-2}	80-90
Silver	Ag^+	90-95
Sodium	Na^+	87-93
Sulfate	SO_4^{-2}	98-99
Thiosulfate	$S_2O_3^{-2}$	96-99
Zinc	Zn^{+2}	98-99

A. The above percent of rejection is for reference only and not to be construed as chemistry, temperature, and TDS are not constant in each water supply.

REVERSE OSMOSIS—HOW DOES IT WORK?



Reverse osmosis (RO) is a separation process that uses pressure to force a solvent through a membrane that retains the solute on one side and allows the pure solvent to pass to the other side. More formally, it is the process of forcing a solvent from a region of high solute concentration through a membrane to a region of low solute concentration by applying a pressure in excess of the osmotic pressure. This is the reverse of the osmosis process, which is the natural movement of solvent from an area of low solute concentration through a membrane, to an area of high solute concentration when no external pressure is applied. The membrane here is semipermeable, meaning it allows the passage of solvent but not of solute.

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