

# Comparison table for detailed specification of Cation/Anion Exchange Membrane

Title		Cation Exchange Membrane			Anion Exchange Membrane				
		Standard grade	Special grade		Standard grade	Special grade			
		CSE	CMB	CIMS	ASE	AHA	ACS	AFX	ACM
Characteristics	Type	Strong Acid (Na type)			Strong Base (Cl type)				Weak Base (Cl type)
	Characteristics	High mechanical strength	High mechanical strength / Alkali resistance	Monovalent cation permselectivity	High mechanical strength	High mechanical strength / Alkali resistance	Monovalent anion permselectivity	High acid diffusion	Proton blocking
	Electric resistance ( $\Omega \cdot \text{cm}^2$ )	1.8	4.5	1.8	2.6	4.1	3.8	1.0	2.6
	Burst strength (MPa)	$\geq 0.35$	$\geq 0.40$	$\geq 0.10$	$\geq 0.35$	$\geq 0.90$	$\geq 0.15$	$\geq 0.25$	$\geq 0.15$
	Thickness (mm)	0.16	0.21	0.15	0.15	0.22	0.13	0.17	0.11
	Application	<ul style="list-style-type: none"> <li>Desalination of foods</li> <li>Desalination / concentration of inorganic salt</li> <li>Removal of hardness and nitrogen from underground water</li> </ul>	<ul style="list-style-type: none"> <li>Alkali recovery</li> <li>Acid and alkali production (BPED)</li> <li>Diaphragm</li> </ul>	<ul style="list-style-type: none"> <li>Acid recovery</li> <li>Separation of metals</li> <li>Salt production</li> </ul>	<ul style="list-style-type: none"> <li>Desalination of foods</li> <li>Desalination / concentration of inorganic salt</li> <li>Removal of hardness and nitrogen from underground water</li> </ul>	<ul style="list-style-type: none"> <li>Alkali recovery</li> <li>Diaphragm</li> </ul>	<ul style="list-style-type: none"> <li>Desalination of foods</li> <li>Salt production</li> <li>Nitrogen removal from underground water</li> </ul>	<ul style="list-style-type: none"> <li>Acid recovery (DD)</li> </ul>	<ul style="list-style-type: none"> <li>Acid recovery (DD)</li> <li>Production of acids and alkalis (BPED)</li> </ul>
Recommended field of application	Temperature (°C)	$\leq 40$	$\leq 60$	$\leq 40$	$\leq 40$	$\leq 60$	$\leq 40$	$\leq 40$	$\leq 40$
	pH	0~14	0~14	0~10	0~14	0~14	0~8	0~8	0~8

Electric resistance : Measured on alternative current after equilibration with a 0.5N-NaCl solution at 25°C

Burst Strength : Mullen Bursting strength

CSE and ASE membranes are new products, so the above specifications are subject to change without any notice for product improvement