



DMDT | Dalahoo Membrane
Development Technology





Dalahoo Membrane Development Technology

Company Profile

DMDT Company, the first company that manufactures Reverse Osmosis membranes in Iran, was established in 2012. Regarding raising water demands due to population growth, climate change issue, economic growth, water resources contamination, and water scarcity in the most regions of Iran, offering high-performing ultrafiltration, nanofiltration, and reverse osmosis products can mitigate water crisis. State-of-the-art membranes manufactured by DMDT can be utilized in different sectors, including municipal, industry, power stations, irrigation, and others.

DMDT has developed various RO membranes, including residential, commercial, and industrial that can be used for treatment of brackish water and sea water. The manufactured RO membrane in DMDT are in the shape of flat sheet of thin composite membranes that consist of an active polyamide layer which is supported by a porous polysulphone layer wound round a central collection tube. Production of NF and UF membranes at DMDT will be part of the company development plan in the future.

DMDT operates its manufacturing base in Eyvan Industrial area, Ilam Province, Iran, covering an area of 7 Hectares, with an industrial area of 4,256 square meters. Adhering to the idea of “Fully-automatic Equipment, high-standard production environment and strict quality control, DMDT has set up a fully-automatic membrane sheet producing line and a fully-automatic spiral-winding line with core technologies. The company will, as always, fulfill its social responsibility relying on the well-equipped clean production environment and effluent production in accordance with Iran’s environmental regulations.

Catalogues of Industrial RO Membrane Products

Type	Model	Permeate Flow		Rejection Rate	Active Membrane Area		Spacer Thickness	Testing Conditions (Water temperature at 25 C)			
		GPD	m ³ /d	%	ft ²	m ²	mill	Testing Pressure		Solution Concentration of NaCl	Recovery Rate
								Psi	MPa	mg/L	%
Seawater Desalination Element	SW8040HR-400	7500	28.4	99.8	400	37.2	28	800	5.52	32000	8
Brackish Water Element	LP22- 8040	10500	39.7	99.5	400	37.2	28	225	1.55	2000	15



General Specification of Industrial RO Elements

1) Seawater Desalination Element: SW8040HR -400

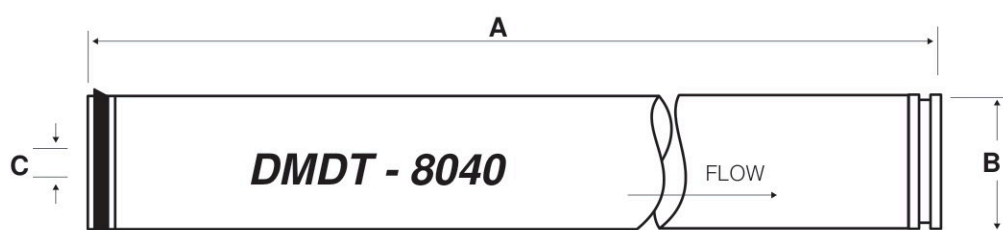
Brief Introduction:

SW-8040-400 aromatic polyamide RO element is developed by DMDT for seawater desalination. This series of elements have the characteristics of low operating pressure, low equipment investment, good desalination performance and stability.

This membrane elements are generally suitable for the treatment of seawater and brackish water with high concentration. It can be used for seawater desalination, desalination of brackish water with high concentration, boiler replenishment water in power plants, wastewater reuse, concentration and recovery of high value-added substances such as food and pharmaceuticals, etc.

Model	Active Membrane Area ft² (m²)	Permeate Flow GPD (m³/day)	Salt Rejection Rate %	Feed Spacer Thickness mill
SW-8040- 400	400 (37.2)	7500 (28.4)	99.8	28
Testing Condition	Operating Pressure 800 psi (5.52 MPa)			
	Temperature at 25 °C			
	Tested at 32000 mg/L NaCl solution			
	PH 8			
	Recovery Rate at 8%			
Operation Limits & Conditions	Maximum operating pressure			1200 psi (8.28 MPa)
	Maximum feedwater flow			75 gpm (17 m³/h)
	Maximum feedwater temperature			45 °C
	Maximum feedwater flow SDI ₁₅			5
	Allowed pH range for feedwater in operation			2 ~ 11
	Allowed pH range for chemical cleaning			1 ~ 13
	Maximum concentration of free chlorine			< 0.1 ppm
	Maximum pressure drop per element			15 psi (0.1 MPa)
Size of Membrane Element: 1.0 inch=25.4 mm				





A/mm (inch)	B/mm (inch)	C/mm (inch)
1016 (40)	201(7.9)	29(1.125)

Notice:

1. All data and information provided in this manual have been obtained from long-term experiment by DMDT. We confirm the effective and accuracy of the data. We assume no liability for any consequences of user's failure in abiding the conditions specified in this manual in use or maintenance of membrane products. It is strongly recommended that the user shall strictly abide the designed use and maintenance requirements and keep relevant records.
2. The permeate value listed in the table is the average value. The permeate flow of single membrane element is tolerance not exceeding $\pm 20\%$ of the nominal value.
3. All wet-type membrane elements have been strictly tested before leaving the factory, and have been treated with 1.0% sodium hydrogen sulfite (10% glycerin antifreeze required in winter) for storage purpose, then sealed with plastic bag in vacuum, and further packed in carton boxes.
4. The membrane used should remain wet after being used; In long term suspension, to prevent the breeding of microbes, soak the membrane elements with protective solution is highly recommended, the solution (prepared with RO filtered water) containing 1.0% sodium hydrogen sulfite (food grade).
5. Operate low pressure flushing for 15-25 minutes of first use, high pressure flushing for 60-90 minutes when first use (Permeate flow no less than 50% of designed flow). Discard all the permeate and concentrated water produced during the first one hour after system start-up.
6. During storage and operation period, it is strictly prohibited to add any chemicals that may be harmful to membrane elements. In case of any violation in adding chemicals, DMDT assumes no liabilities for any damages incurred.
7. Along with technical development and product renovation, all information will be subject to modification without prior notification. Please keep notice of our website for any updates of the product.

2) Brackish Water Element :P22- 8040

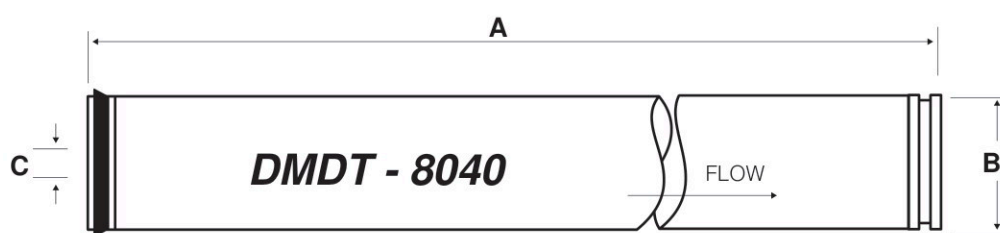
Brief Introduction:

BW-8040 aromatic polyamide RO element is developed by DMDT for treatment of brackish water. It has the characteristics of low-pressure in operation, high permeate flow and excellent rejection performance in removing of solvable salts, TOC, SiO₂, etc. It is especially suitable for the preparation of high purity water in electronics and power industry.

This membrane is normally suitable for treatment of brackish water, surface water, underground water and municipal water with TDS is less than 10000 ppm. It is mainly used for producing various scales of bottle water, drinking water, industrial used pure water, high purity water, boiler replenishment water, also for wastewater reuse, material concentration, purification and refining purposes.

Model	Active Membrane Area ft² (m²)	Permeate Flow GPD (m³/day)	Salt Rejection Rate %	Feed Spacer Thickness mill
LP22 -8040	400 (37.2)	10500 (39.7)	99.7	28
Testing Condition	Operating Pressure 225 psi (1.55 MPa)			
	Temperature at 25 °C			
	Tested at 2000 mg/L NaCl solution			
	PH 7 ± 0.5			
	Recovery Rate at 15%			
Operation Limits & Conditions	Maximum operating pressure			600 psi (4.14 MPa)
	Maximum feedwater flow			75 gpm (17 m³/h)
	Maximum feedwater temperature			45 °C
	Maximum feedwater flow SDI ₁₅			5
	Allowed pH range for feedwater in operation			2 ~ 11
	Allowed pH range for chemical cleaning			1 ~ 13
	Maximum concentration of free chlorine			< 0.1 ppm
	Maximum pressure drop per element			15 psi (0.1 MPa)
Size of Membrane Element: 1.0 inch=25.4 mm				





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