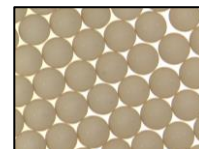


**DOWEX MARATHON™ 9600 Ion Exchange Resin**

Uniform Particle Size, Weak Base Anion Exchange Resin for Industrial Demineralization Applications

Description

DOWEX MARATHON™ 9600 Ion Exchange Resin is designed for water utility operators and power plant chemists who are concerned with achieving maximum water and chemical efficiency. The chemical properties and particle size of the resin have been optimized to help yield excellent operating capacity and rinse characteristics, reducing chemical regenerant and rinse water usage while maintaining a superior physical stability that users of DOWEX MARATHON™ Resins have come to know through more than 25 years of successful operation. This allows users to simultaneously minimize operating costs and environmental impacts while also preserving precious raw water resources.



While the benefits of DOWEX MARATHON 9600 can be realized in standard co-flow regenerated systems, it is ideal when used in packed bed and layered bed systems such as the AMBERPACK™ and UPCORE™ Ion Exchange Systems. DOWEX MARATHON 9600 and DOWEX MARATHON 4200 CI have been specifically designed to work together in new and retrofitted layered bed systems to provide improved water and chemical efficiency.

Typical Physical and Chemical Properties**

Matrix	Styrene-divinylbenzene, macroporous
Type	Weak base anion
Functional Group	Tertiary amine
Physical Form	Cream, opaque, spherical beads
Ionic Form as Shipped	Free Base Form
Total Exchange Capacity	≥ 1.3 eq/L
Water Retention Capacity	57 – 63%
Particle Size	
Particle Diameter ^b	525 ± 50 µm
Uniformity Coefficient < 300 µm	≤ 1.1 ≤ 0.1%
Whole Uncracked Beads	≥ 95%
Swelling	FB → HCl: 15%
Bulk Density, as shipped ^c	670 g/L

^b For additional particle size information, please refer to the [Particle Size Distribution Cross Reference Chart](#) (Form No. 177-01775).

^c As per the backwashed and settled density of the resin, determined by ASTM D-2187.

Suggested Operating Conditions**

Maximum Operating Temperature	100°C (212°F)
pH Range	0 – 14
Bed Depth, min.	700 mm (2.3 ft.)
Flowrates	
Service	5 – 50 BV*/h (1 – 6 gpm/ft ³)
Backwash	See Figure 1
Regeneration	
Chemical Injection	2 – 4 BV/h (0.25 – 0.5 gpm/ft ³)
Displacement Rinse	2 – 4 BV/h (0.25 – 0.5 gpm/ft ³)
Fast Rinse	5 – 50 BV/h (1 – 6 gpm/ft ³)
Total Rinse Requirement	2 – 5 BV
Regenerant	
Concentration	2 – 4%
Dose (100% basis)	120% of ionic load

* 1 BV (Bed Volume) = 1 m³ solution per m³ resin or 7.5 gal per ft³ resin

Hydraulic Characteristics

Bed expansion of DOWEX MARATHON™ 9600 Ion Exchange Resin as a function of backwash flowrate and temperature is shown in Figure 1.

Pressure drop data for DOWEX MARATHON 9600 as a function of service flowrate and temperature is shown in Figure 2. Pressure drop data are valid at the start of the service run with clean water.

Figure 1: Backwash Expansion

Temperature = 10 – 60°C (50 – 140°F)

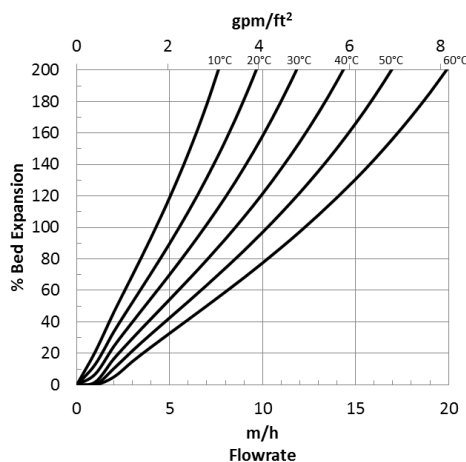
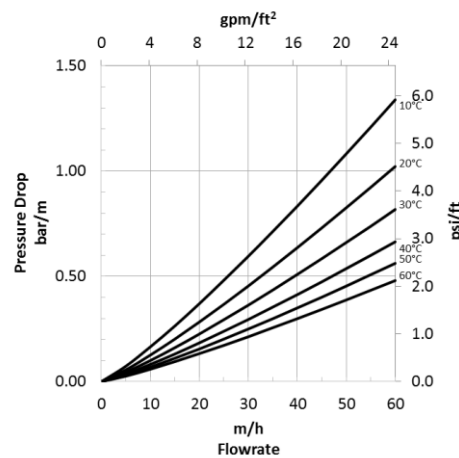


Figure 2: Pressure Drop

Temperature = 10 – 60°C (50 – 140°F)



Product Stewardship

Dow has a fundamental concern for all who make, distribute, and use its products, and for the environment in which we live. This concern is the basis for our product stewardship philosophy by which we assess the safety, health, and environmental information on our products and then take appropriate steps to protect employee and public health and our environment. The success of our product stewardship program rests with each and every individual involved with Dow products—from the initial concept and research, to manufacture, use, sale, disposal, and recycle of each product.

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Dow strongly encourages its customers to review both their manufacturing processes and their applications of Dow products from the standpoint of human health and environmental quality to ensure that Dow products are not used in ways for which they are not intended or tested. Dow personnel are available to answer your questions and to provide reasonable technical support. Dow product literature, including safety data sheets, should be consulted prior to use of Dow products. Current safety data sheets are available from Dow.

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WARNING: Oxidizing agents such as nitric acid attack organic ion exchange resins under certain conditions. This could lead to anything from slight resin degradation to a violent exothermic reaction (explosion). Before using strong oxidizing agents, consult sources knowledgeable in handling such materials.

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