DOWEX™ MARATHON™ A2 Resin

Efficient, Uniform Particle Size, High Capacity, Type 2 Strong Base Anion Exchange Resin

For Demineralization Applications

Description

DOWEX™ MARATHON™ A2 Anion Exchange Resin is specifically designed to give high throughput and economical operation in primary demineralizer beds. Its uniform particle size offers a number of economic advantages over conventional polydispersed resins. The small uniform bead size of DOWEX MARATHON A2 Resin results in rapid exchange kinetics during operation, more complete regeneration of the resin and faster, more thorough rinse following regeneration. It is normally used for waters in which silica and carbon dioxide do not exceed 25% of the total anions. For water containing higher levels of these "weak" acids, DOWEX MARATHON A Resin is recommended.

Typical Physical and Chemical Properties

Physical Form		White to amber translucent beads
Matrix		Styrene-DVB, gel
Functional group		Dimethylethanol amine
Ionic form as shipped		**Cl^- form**
Total exchange capacity, min.	eq/L kgr/ft^3 as $CaCO_3$	1.2 26.2
Water content	%	45–54
Particle size distribution†		
Uniformity coefficient, max.		1.1
Mean particle size	µm	500 ± 600
Whole uncracked beads	%	95–100
Total swelling ($Cl^- \rightarrow OH^-$)	%	15
Particle density	g/mL	1.09
Shipping weight**	g/L lbs/ft^3	690 43

† For additional particle size information, please refer to Particle Size Distribution Cross Reference Chart (Form No. 177-01775).

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

Suggested Operating Conditions

Maximum operating temperature	
OH^- form	35ºC (95ºF)
Cl^- form	70ºC (160ºC)
pH range	0–14
Bed depth, min.	800 mm (2.6 ft)
Flow rates:	
Service/fast rinse	5–60 m/h (2–24 gpm/ft^2)
Backwash	See Figure 1
Co-current regeneration/displacement rinse	1–10 m/h (0.4–4 gpm/ft^2)
Counter-current regeneration/displacement rinse	5–20 m/h (2–8 gpm/ft^2)
Total rinse requirement	3–6 BV*
Regenerant:	
Type	2–5% NaOH
Temperature	Ambient or up to 35ºC (95ºF) for silica removal

*1 BV (Bed Volume) = 1 m_3 solution per m_3 resin or 7.5 gals per ft_3 resin

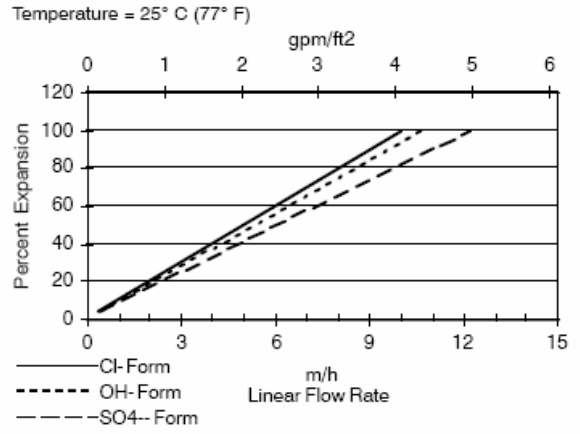
Packaging

25 liter bags or 5 cubic feet fiber drums

Hydraulic Characteristics

Figure 1 shows the bed expansion of DOWEX™ MARATHON™ A2 Resin as a function of backwash flow rate and water temperature. Figure 2 shows the pressure drop data for DOWEX MARATHON A2 as a function of service flow rate and water temperature. Pressure drop data are valid at the start of the service run with clear water and a correctly classified bed.

Figure 1. Backwash Expansion Data

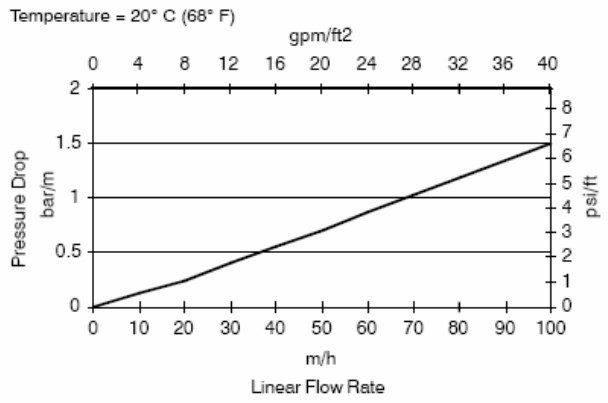


For other temperatures use:

$F_T = F_{77°F}$ [1+ 0.008 ($T_{°F}$ -77)], where F ≡ gpm/ft^2

$F_T = F_{25°C}$ [1+ 0.008 (1.8$T_{°C}$ - 45)], where F ≡ m/h

Figure 2. Pressure Drop Data



For other temperatures use:

$P_T = P_{20°C}$ / (0.026 $T_{°C}$ + 0.48), where P ≡ bar/m

$P_T = P_{68°F}$ / (0.014 $T_{°F}$ + 0.05), where P ≡ psi/ft

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.

Customer Notice

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.

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.